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*Wilhelm Dörpfeld*

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# JOURNAL

OF

## THE ROYAL INSTITUTE OF BRITISH ARCHITECTS

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### Seventy-sixth Session—1910–1911.

THE OPENING ADDRESS. Delivered by the President, Mr. LEONARD STOKES, at the First General Meeting, Monday, 7th November 1910

**A**LTHOUGH I have for some time past been acting as your President, this is the first opportunity I have had—and I hasten to avail myself of it—to thank you all for the honour you have done me in electing me as your President. I need hardly say that I much appreciate the honour, though I could perhaps have wished for a somewhat less strenuous term of office, for although this is but the opening meeting of the Session, the Institute has already held a great Town Planning Conference. I know you will be glad to hear that this was an unqualified success, thanks to royal patronage, and largely to the great help received from the Royal Academy and the City Corporation. But, if I may say so, this Institute deserves some credit for having had the boldness to take the matter up and the ability to carry it through so successfully. I think, too, we have shown the world at large pretty thoroughly the substantial interest we take in the subject of Town Planning, and our capacity to deal with problems of this nature in a large and public-spirited manner.

Having had such a successful conference, however, it would be folly to let the matter drop, and it is proposed to hold shortly a much smaller gathering, composed entirely of experts, with a view to seeing if some definite proposals on the subject cannot be drafted, for the help of those either actively engaged in carrying out works of this nature, or in preparing schemes under the Act. Some conclusions of this sort would be most helpful, and as we have taken the lead we must not fall behind and let the subject get possibly into wrong hands.

Mr. Burns, who did so much for us as Hon. President, in one of his invigorating speeches during the Conference, advised architects to come down off their pedestals and mix with their fellow-creatures and their projects. What I think he probably meant, if I may say so, was that we architects should come out of our shells rather than off our pedestals; and this is undoubtedly sound advice, for do we not represent the art which of all others has done the most for mankind, both as regards providing things of great utility and objects of the greatest beauty? Has not history, too, been more clearly written in the architecture of past ages than in any other medium? If so, there is no particular reason—apart from our natural modesty—why we should hang down our heads when forced to admit that we are architects; we should rather glory in the fact, for have we not, for that very reason, much to be proud of, and but little to regret? Any one who has travelled knows that the extraordinarily beautiful and impressive tombs and temples

on the Upper Nile are not things to be ashamed of; and are they not works of architecture—even then the “mistress art”? And let any one who wants to scoff at us go to Greece, and then tell us what he thinks of what he has seen there. The sculpture is certainly wonderful, but I assert, without much fear of contradiction, that it is architecture which stands out pre-eminently in this great home of art.

In our own country, too, is not the case very much the same? What is most calculated to raise the mind, cultivate the taste, and generally inspire us with a love for the beautiful in almost every village we go into? Is it not the parish church? And if we choose a town and not a village, is it not again the cathedral which dominates the whole, asserting with solemn dignity that architecture has but few rivals and certainly no equal? I do not for one moment wish to imply that good architecture is only to be found in our churches and cathedrals. I only wish to make it clear that there, at any rate, we, in a most thrilling way, see proclaimed the greatness of our calling.

To take this great city alone, is it not architecture which makes it so interesting, though somewhat bewildering, and may I ask, without any disrespect to other arts, whether the intelligent stranger is most impressed by the works of the English painter, the English sculptor, or the English architect to be found within its walls? I daresay we might have had even more fine buildings had the national temperament been given rather more to display and less to money-making, but, at any rate, we have a unique collection in our City churches with St. Paul's Cathedral at its head. Wren, too, made a plan for rebuilding London after the Fire, a plan which every one now regrets was not carried out, and yet if the same opportunity were to come again to-morrow I daresay those in high places would make the same mistake their forefathers made, and in spite, too, of all they have recently heard on Town Planning. In fact, within the last few days the City Fathers have decided to build a new bridge across the Thames under the very shadow of St. Paul's, and yet in preparing their scheme architectural effect in dignified arrangement is the one matter that is left to take care of itself; and not only that, but when a deputation from this Institute waited upon the Bridge House Estates Committee, which had the matter in hand, and besought them to take advice on this particular point, it was disregarded and misunderstood, and the world has been told that it would cost a million more to carry out the scheme proposed by the deputation. Now I wish to repeat what I have already said in the public Press, that all the deputation did was to urge upon the Committee the importance of considering St. Paul's Cathedral, when selecting the position of the Bridge, and the arrangement of its approaches, and the necessity of obtaining the best possible advice on this point from the first. That was the *scheme* proposed by the deputation, and one would have thought that as business men the Committee could have seen the wisdom of getting the very best possible advice before embarking on any project costing nearly two millions of money. There are many ways of doing most things, and probably more than one of laying out this Bridge, and what we fear is that the Corporation has not yet hit upon the best way. I see in the Press that designs for the Bridge are to be advertised for; but what should be done is to advertise for a scheme rather than a Bridge, if any advertising is necessary; but the right thing to do, I maintain, is for the Corporation to appoint the best architect it can find—for there are architects and architects, I fear, just as there are golfers and golfers—to work with the Engineer and the Surveyor they have already appointed, and for these gentlemen to reconsider the lay-out of the Bridge and its approaches, and have proper models made, so that this magnificent opportunity of making a really great national improvement may not be thrown away.

A glance at the plan approved by the Corporation will explain my meaning, for on this the position of St. Paul's Cathedral is not even indicated. If something of this sort is not done then the only course I can see is for us to raise as much public interest and influence as we possibly can, and oppose the Bill in Parliament, when the Corporation seeks the necessary powers to



erect the Bridge. Your Council has, however, decided to petition the Corporation in the following terms :—

*To the Right Hon. the Lord Mayor, Aldermen, and Commons of the City of London in Common Council assembled —*

The Humble Petition of the President and Council of the Royal Institute of British Architects

Sheweth

That your Petitioners have had before them the Report of the Bridge House Estates Committee containing a scheme for the New Road and Bridge in regard to which they understand that Parliamentary sanction is about to be applied for.

Your Petitioners venture to urge the advisability of obtaining architectural advice upon the whole proposal, which involves artistic considerations of great importance.

Your Petitioners, with the support of the many distinguished persons whose names are attached to this petition, therefore humbly pray that you will give careful consideration to this aspect of so important a public undertaking.

I hope that even yet we may be successful.

Of course, if it is decided to ignore architecture altogether in the Bridge and adopt a design entirely of an engineering character, and another Benjamin Baker can be found, I can imagine a steel bridge of a single span which might look very fine; but even then the approaches must be properly arranged and designed by an architectural mind, as I take it that these cannot very well be of steel in any case.

While on the subject of bridges and their approaches it may be interesting to inquire into the designing of some of our best examples, viz. Waterloo and London Bridges, and my friend, Mr. A. E. Richardson, has kindly supplied me with the following information which he has collected for a book he is writing entitled *Monumental Architecture in Great Britain*. Waterloo Bridge, which was at first called the Strand Bridge, was designed by Ralph Dodd, an engineer, who had, however, made a particular study of architecture, and an Act of Parliament was obtained in 1809 for its erection on Dodd's design. Before the bridge was begun, however, Dodd was deposed, and John Rennie, another engineer, who does not appear to have had any particular knowledge of the subject—having begun life as a millwright—was employed to carry out the work, and the following extract from the *Gentleman's Magazine*, page 482, vol. 87, 1817, the year the bridge was finished, is, I think, conclusive :—

“ Mr. Ralph Dodd requests us for the sake of justice to contradict an assertion which has got abroad, viz. that Mr. Rennie was the architect of the Strand or Waterloo Bridge, which he says ‘ is not the fact, it being an honour that I cannot allow to be taken from the family. The plan and design of that bridge were approved by the proprietors, and its measurements inserted in the Act of Parliament for building it (of course no other could be admitted) long before Mr. Rennie had anything to do with it. These plans are now accessible for the inspection of any gentleman who may wish to see if they have been acted upon, and in which it is presumed the architectural taste of this country has not been disgraced.’ ”

The cost of the Bridge was £565,000, the approaches £112,000, land and buildings £373,000; total £1,050,000; and it took six years to build; we may take it that the designer of the Bridge was Ralph Dodd, an engineer who had made a special study of architecture, and was naturally and very justly proud of its architectural effect.

It is suggested that Dodd in designing Waterloo Bridge may have gone to old Blackfriars Bridge for his *motif*. This bridge was the work of Robert Mylne, and was designed by him on his return from Rome, where he had been studying architecture, and was somewhat similar in design to the present Waterloo Bridge, as may be seen from the old drawings of the bridge hanging on the walls.

We now turn to London Bridge, the design for which was undoubtedly produced by John Rennie—the work being carried out by his son, Sir John Rennie. Having been connected with the erection of a fine work like Waterloo Bridge, it seems only natural that Rennie should have made a good design for London Bridge, and we are grateful to him for having done so; but it is interesting to note that the younger Rennie was Professor Cockerell's brother-in-law, with whom I believe he travelled a good deal, and that Cockerell must in all human probability have had some influence on Rennie when he was designing the details of the bridge. We know, at any rate, that Professor Cockerell made designs for the buildings connected with the approaches to the bridge, and that these were considered by the Committee but rejected, and the work was eventually put in the hands of Sir Robert Smirke. Rennie regretted very bitterly the non-adoption of Cockerell's designs, and could never bring himself to admire those erected by his other friend Smirke.

I think I have now said enough to show pretty clearly that the designers of our best bridges, even if they were not architects by name, were so by training, at any rate; and good architecture, whatever may be said about it, cannot be produced except by a trained mind.

But I have wandered somewhat from my point, which is that architecture is an all-important matter. I fancy, however, some people may say, "That it is all very true of the past, but architecture is not what it used to be." Well, I deny that. The best architecture in England of recent years is just as good on the whole as it ever was, though conditions are much more difficult and great opportunities not so often to be met with. If evidence is wanted to prove this statement look round the walls to-night, and you will see representative work of some of our Royal Gold Medallists—as far as we have been able to collect and exhibit them—since the medal was first presented in 1848 to Professor Cockerell. The names of such great men as Cockerell, Barry, Donaldson, Tite, Owen Jones, Scott, Street, Butterfield, and Bodley, not to mention living men, are enough alone to prove my case without looking at the work here shown—though I advise you nevertheless carefully to examine it; and also please remember that there is at least one other name equally great which for some reason or another—but I think not through any real fault of this Institute—does not appear in the list of recipients of this royal recognition of our calling.

It may be said that these gentlemen are exceptions. Of course they are to some extent, but there are many others who approach very nearly to them in the quality of their work and in their power of design. And I think to-day we have even more good men than ever, particularly amongst the younger generation, their training now being so much more systematic than it used to be; and we hope to make it even more so in the future, as the various Architectural Schools about the country are all doing such good work. There is, however, a general feeling amongst thinking men, I fancy, that we do not take our students far enough along the road to proficiency. They are very well grounded in many cases, but their studies, under direction, are cut too short, and they are left to shift for themselves just when direction would be most useful and a helping hand of the greatest assistance. If I may say so, it seems to me that the Royal Academy is the right body to undertake this higher educational work, at any rate in London; and if it would establish a school somewhat on the model of the *École des Beaux-Arts* in Paris, then I am sure we as a body would be most grateful. There are plenty of schools where the smaller architectural subjects are taught, but larger projects are not often dealt with, and the Academy might well take them up; and if Town Planning is to become a living thing amongst us the design and arrangement on dignified lines of streets, bridges, squares, and other open spaces must be systematically taught to our students.

A large sum of money has recently been left by the late Mr. Henry Jarvis to this Institute, to be spent either on new premises or on studentships and prizes, so that, fortunately, we are just now in a position to offer encouragement to this kind of study should we deem it desirable, as no doubt we shall.

As this is the first meeting held under what is now practically our own roof since our foundation in 1834, I think we may congratulate ourselves on the event and our Hon. Secretary and architect upon the success of his efforts in adapting these galleries to our use. Those of us who knew them as they used to be can hardly recognise this fine suite of rooms we are now in, which will give us the space to develop in that we have badly wanted for years past. Whilst on this subject I should like to give you a rough outline of our present position with regard to these premises. We are, then, as I have said, now practically the freeholders of the whole of 9 Conduit Street, including these galleries, as we hold them on a perpetual lease from the Corporation of London, and we have not only turned a short lease of 9 Conduit Street into a perpetual one and added something like 112 per cent. to our accommodation by acquiring and adapting these galleries, but have only added 88 per cent. to our old expenditure in so doing. We may be shoemakers' children, but in this case I think we have managed to get pretty well shod.

It is proposed to hold exhibitions, &c., from time to time in these galleries, and I think we shall find them of use in many ways; but if at times we have no particular need for them, there must be numbers of societies who would gladly rent them from us for exhibitions or meetings. There is a separate entrance from Maddox Street, and the letting-off of two of the galleries under the name of the Maddox Street Galleries would be an easy matter. This could be done without interfering in any way with the ordinary work of the Institute, and two or three hundred a year, say, might thus be added easily to our income.

I now want to remind you of another subject that has been actively engaging the attention of most of us for years, and which resulted last year in our acquiring another Supplemental Charter and new By-laws. Under these a new class of members has been established in this Institute, for it was felt that we should be the unmistakably representative body in the profession. These new members are called Licentiates, and we hope to enrol practically all *bona fide* practising architects who are not already members in this class. You are aware that there are a large number of men about the country who, for one reason or another, never presented themselves for our examinations or became either Associates or Fellows. Many of them are now in active practice, and we can hardly ask them to subject themselves to examination; the only thing that we ask of them, therefore, is that they shall be thirty years of age, have either been in practice for five years, or shall have been engaged in the study or practice of architecture for ten years. This class is to be a temporary one, open for twelve months only, and I am glad to say many hundreds have already joined, though only six months out of the twelve have yet elapsed. When once within our ranks Licentiates can either remain in that class or can pass on to the Fellowship, when qualified, and after passing such examinations as may be established. Such examinations may possibly largely take the form of an inquiry into the quality of the candidate's executed work, or may even take the form of the special examination for the Associateship, the Board of Education having power to exempt a candidate from such subjects as his executed works may show him to be proficient in.

I do not want to weary you with this subject, but I do think it most desirable that as many members as possible should join our ranks, for, firstly, I think we are well worth joining; and, secondly, when we have a large roll of members we shall be much more influential, and can then apply to Parliament for such form of recognition as we think most desirable. I cannot say that I am a great believer in Acts of Parliament, but others perhaps are, and when we are a united profession we shall at any rate be in a better position to decide what it is we really do want, if anything, beyond being qualified members of the one Society which is recognised by all as truly representing architecture in this country.

Whilst on the subject of Acts of Parliament I should like to call your attention to the new Copyright Bill which it is proposed to introduce this autumn, largely, I believe, to meet the wishes of painters and sculptors, who, I think, are reasonably dealt with in the Bill; and so are

we in the main, but there are details that will want adjusting if I understand the Bill aright, for any little right we may now have in our designs is to be taken from us ruthlessly and vested in the building owner. If any one copies a piece of sculpture the copy can, under the Bill, be destroyed by the original designer. But an architect having once designed a building has no further real right in his design whatever. This hardly sounds like common justice, but it may be. Again, if I design a chimney-piece and put it in the best bedroom of a house for A., I can never use that chimney-piece for B. without obtaining A.'s permission. This seems a little hard, as we all know there are numbers of small fittings, like door furniture, bell pushes, and grates, that, having once designed, an architect likes to feel he can use again and again if he so desires. The new Bill, however, will stop all this, unless we can get it altered, or hit upon some way of "contracting out" of it. At present we are only liable to be copied by those who have a sneaking admiration for us. In future, if the Bill becomes law, we shall not be allowed to put up even colourable imitations of our own work. This will come very hard on some of us, I fear!

You will be glad to hear—if you have not already heard—that the Lord Mayor, when asked to form a Committee to organise a memorial for London to the memory of Edward VII., at once wrote to me as your President, and asked me to serve on that Committee, and, feeling that you would like to be represented, I accepted the invitation on your behalf, and since then my name has been added to the Executive Committee. I feel, of course, the responsibility of the position, but will do my best to represent architecture in response to the compliment paid to this Institute. The problem of selecting a suitable form for the memorial is not an easy one to solve, but, besides being architects, we were his loyal and loving subjects, and I know you would all wish a suitable memorial to be erected in London to our late King and Patron's memory.

In conclusion I will only add that we architects are obviously somewhat powerless, unless those who have the control of public and other works will come to us to help them. At present the fashion is all for buying old masters and preserving old buildings, very little encouragement being given to those who have to provide old masterpieces for future generations. Large Government and Municipal Departments do not sound like places where art is likely to thrive or flourish, and yet most of our principal public works now first see the light in these uncongenial hotbeds of sealing wax and red tape. And when our governing bodies do not encourage and appreciate the beautiful how can we expect the public to understand that it is possible to transform even commonplace projects into works of real grace and beauty? Ornament and elaboration are quite unnecessary, but thought, study, and skill are indispensable. With these, however, the most ordinary and everyday undertakings have been in the past, and can again be in the future, transformed by proper architectural treatment into things of real beauty, a pleasure to see, a pleasure to live with, and a lasting benefit not only to us but also to our children and their children's children.

## VOTE OF THANKS.

THE RIGHT HON. SIR GEORGE REID, in the course of a very humorous speech proposing a vote of thanks to the President for his Address, said: There is one good thing about this Royal Institute of British Architects; it not only has a great name, but it has got a grievance—about that bridge, for instance. It is a great thing to have a grievance. I do not think any real Englishman is worth anything unless he has a grievance, and for once in a way I think the grievance a sound one. I speak of course with the greatest possible diffidence on questions affecting architecture, but one cannot go through London, as I have done during the past five or six months, without wondering how it is that the City got built at all in the way it is built. (Laughter.) There is not much trace of a plan about the City of London; there are some great things about it, but unfortunately they are several hundred years old. I know of course that things move slowly here. For instance, I am told to-night that it is about seventy-three years since you endeavoured to get a little house of your own, and you are glorying over the fact that you have got into one at this speedy rate. (Laughter.) I am glad that the Institute is becoming progressive. Australia in 1837 was almost a silent virgin space; it had been slumbering for ages without a glimmer of civilisation. Yet since 1837 Australia has become one of the most remarkable, one of the most progressive countries under the sun. A great thing about the President's Address is the evidence it gives that the men who have succeeded in this glorious profession are thinking for those who have not had an opportunity of developing their tastes and their abilities. It is a great thing that project of the President's to bring opportunities of showing talent in your profession more and more within reach of the masses. Out in Australia we have a number of splendid architects. The climate there is very different from yours, and we have therefore a very different architecture; but our architects have had a grand inheritance in the genius of those who went before them. I do not know much about architecture, but I think I am safe in saying that St. Paul's, Westminster Abbey, and the Houses of Parliament are sufficient in themselves to make the fame of a great city. Why should not our great men of to-day have the chance of building edifices like those? (Hear, hear.) We in Australia are beginning where London began hundreds of years ago, and are about to establish a capital there. That capital will be in years to come the capital of a great nation, for Australia is larger than the United States of America; and I hope I will have the advantage of a wise system of planning (hear, hear), and that the very best plan in the world will be adopted, whether it

comes from our own Australians, or from you, or even from Germany. (Laughter.) There is one good thing about architects, their architectural powers may lie fallow for two or three hundred years, but they come out again. (Hear, hear.) I think there is a gentleman in this room who is a descendant of Inigo Jones. Now for three hundred years none of his descendants have ever shown any genius for architecture, but it has come out now—(laughter)—and come out in real earnest. There is an old master come to life again in Mr. Inigo Triggs. (Hear, hear, and laughter.) Now I want to ask you this: have you yet been able, you great architects of this Royal Institute of British Architects, to form an estimate for an unfortunate man's building that was as moderate in its total as the bill for extras sent in afterwards? (Laughter.) In Australia a friend of mine, having rather a nice house, in an evil moment thought he would improve on it, and called in an architect. No, I think he dispensed with the architect, but called in a builder—(oh! and laughter)—that is where he made the mistake. (Hear, hear.) I thought you would agree with that! He found the extras were about twice as much as the original contract. (Laughter.) I do hope you will make it a rule that if any member of this Institute sends in an estimate for work, and the extras amount to more than 75 per cent.—(laughter)—above the original estimate, you will put him back into that preliminary class you reserve specially for the youngsters.

There is another thing that I think is a disgrace to somebody in London—whether it is the architect or not I do not know. When will the genius of the architect discover that he could save an enormous amount of valuable space in a house if he would not waste it upon the provision of those clumsy staircases, and give just a little space for a nice lift? Do you not think there would be a lot of common sense in it?

Touching the question of town planning, is it not almost as important, outside London where you have the space, to have as good a system of garden planning as of architectural planning? (Hear, hear.) I should like very much to see the garden planning made a more prominent feature of architectural work than it seems to be. There are some glorious old places about England, but I do not see, in some of the smaller houses with smaller spaces, the taste which I should like to see associated with even the smallest gardens throughout the length and breadth of the United Kingdom.

It has been a great privilege to me to come into this friendly association with members of this distinguished Institute. I have felt it particularly a great privilege to come, I hope, within the sphere



of friendly feelings of the President of this Institute. Layman as I am, I admire the manliness, the good sense, and broad spirit of this annual Address; and I feel perfectly justified in moving this vote of thanks in the most hearty way to your distinguished President. I also feel sure that, great as your past has been, your future will be even more distinguished. (Loud applause.)

THE RIGHT HON. THE EARL OF PLYMOUTH [H.A.]: I have but just been asked to second the vote of thanks which has been proposed in so humorous and so eloquent a way by Sir George Reid, and seeing that you have just paid me the great compliment of nominating me amongst others for the Honorary Fellowship of this Institute, I feel it quite impossible to refuse, although it is a somewhat difficult task to perform at a moment's notice. May I say with regard to the extremely interesting Address that the President has just delivered, that although many hard things may be said of architecture in London and in this country generally, I honestly believe that our failures are due mainly to the inability of those who pay for the building to appreciate what is really good in architecture. To this Institute, which rightly represents what is best in architecture, we look for a lead in construction and planning, and in all that makes for beauty in architecture, and I believe that English people in general and Londoners in particular are beginning at last to recognise that fact. When I had the privilege of presiding at the Office of Works, it often occurred to me that it would be a great thing if public bodies in London could turn to some permanent committee—upon which the Royal Institute of British Architects would obviously be prominently represented—to pass the designs in street architecture, and that they would put themselves a little more into the hands of those who have made a life study of architecture, rather than hurriedly and often blindly to plunge into some big architectural scheme without being adequately equipped for the work. (Hear, hear.) I believe that there is a tendency in this direction, but I am firmly convinced that the position of the Royal Institute of British Architects, and the place which it holds in this country, is being strengthened year by year, and that we are acknowledging that the Institute does truly represent the best knowledge and feeling in this great branch of art. (Applause.)

MR. WALTER MILLARD [A.]: May I, as an old friend of our President, whose able Address we have just listened to, say a word about the man himself? If there is anybody present here who can claim a much longer acquaintance with him than I can I will give way at once. I remember well over thirty years ago dropping one evening into the very next room to this, where the Architectural Association used to hold its Class of De-

sign. The President of the Class was there with a little cluster of students round the table, and among these I noticed a fair, flaxen-haired youth, in a brown overcoat, who seemed to be freely offering his criticisms on the other men's designs as they came up in turn. He sufficiently attracted my attention to make me ask his name. The reply I got was "Oh, that is Leonard Stokes." I had not heard the name before, but the tone of my informant gave me the impression that I ought to have known it, and that, in fact, I might consider myself rather an outsider for not knowing it. A very few days afterwards that name cropped up again. I was in Street's office, in an upper room, and word was brought up to me that Leonard Stokes had come in to see "the Governor." I fear I was wicked enough to ask, "Who's he, and what does he want?" However, I was told very soon that he had seen "the Governor" and that Leonard Stokes was going to Dublin as clerk of the works for Christchurch Cathedral. So I looked down my nose when I realised that this youth had been selected, not from the architect's office, but from the quantity surveyor's, as the fittest man to send out for such a position. Time went on, and Christchurch Cathedral, Dublin, was finished; and one day Mr. Street was giving me some plans for the office to get on with, when he suddenly said, "By the way, next Monday Mr. Leonard Stokes will come into the office. He has done his work at Dublin most admirably." Then he looked at me rather significantly I fancied, and added, "I think you will find he has got a head on his shoulders." (Hear, hear.) Well! chief draughtsmen have their feelings—they are not all angels, they do like to have things broken to them gently about new-comers; but I need not pursue that subject. Leonard Stokes came, and he and I before very long found ourselves out of the office travelling together, working together, I may say playing together—living together for months at a time, and experiencing all the charming vicissitudes incidental to good friendship. I hope, ladies and gentlemen, I have made out my claim to speak about him. I need not tell you how he went on and won the Pugin Studentship, at an age that made some people question whether he was really as young as he represented himself to be—considering the excellence of the work he was submitting. Most of you remember his Presidency of the Association. I need not enlarge more about him. You all know of Mr. Street as an architect: I am not going to ask you what you think of him as an architect, I will only ask you what you think of him as a prophet, in predicting of the coming President that he would prove to be a man with a head on his shoulders? (Hear, hear.)

THE HONORARY SECRETARY having put the motion from the Chair, the vote of thanks was carried by acclamation and briefly responded to.

## REVIEWS.

## THE NEW SORBONNE.\*

*Monographie de la Nouvelle Sorbonne. H. P. Nénot, Membre de l'Institut. Introduction par O. Gréard, Membre de l'Académie Française. Fo. Imprimerie Nationale, 1903.*

From the outer title page bearing the legend *Monographie de la Nouvelle Sorbonne*, in a clear type seldom seen in any books save those made at the Imprimerie Nationale, and the inscription by the donor: "à mes confrères du Royal Institute of British Architects, Hommage Confraternel, H. P. Nénot," in the nervous handwriting of the distinguished architect whose conceptions are recorded in the fifty plates of views, plans, and details, to the fiftieth plate and last page—showing a bird's-eye view, taken, evidently, from the roof of the library of the Ecole de Droit at the corner of the Rue Cujas and the Rue St. Jacques—this is a remarkably fine piece of bookmaking.

From the Anglo-Saxon standpoint it is all the more remarkable that it is a Government publication made only to be distributed among certain institutions and individuals to whom this record of a very important architectural work or well-studied plan would prove valuable. Such a volume could be produced in this country only by a philanthropist; as a monograph of this kind and extent could only find its way into such private libraries as those which admit a subject of unique interest and very occasional use, and into public collections of which the number under control of intelligences broad enough to recognise the general rather than specific value of such a production is very limited.

The Sorbonne, as we are assured by Monsieur Gréard, Membre de l'Académie Française, who has written the introduction to the monograph, was founded in 1253 by Robert de Sorbonne, chaplain to Louis IX., upon a part of the present site, as a hostel for poor students of theology and their teachers. The buildings erected at that time were, if we may depend upon the old documents in *Les Archives* and the restoration of the plan in this book, two or three small buildings of one or two rooms each built around that which is to-day the principal court. A small chapel was added in 1326, which divided the court in halves. During the following three hundred years the School of Theology at Paris gained great repute as a seat of learning; and in 1627 Cardinal Richelieu began its rebuilding, which, under the architect Lemercier, occupied twenty-one years. The buildings erected by Richelieu consisted of the existing chapel—one of the most charming churches of Paris—and a group of buildings surrounding the main court. Mrs. Pennell says that "the virtue of Paris is . . . its faculty for remaining true to tradition on the

traditional spot," and instances that "the Romans would find the metropolitan church where they had their temple of Jupiter; St. Louis would find justice administered where he held his open court." "St. Louis" would also find in the north-east corner of the main court of the Sorbonne a wing of the present building the walls of which follow the lines of his ancient foundations. Richelieu would find, naturally, much more. Practically everything he built is there, but he would find it changed. Walls which were not quite straight on the plans of his day have been made so; one end of the court which was formerly askew now stands at right angles with the sides; an arcade has been added which runs round one side and one end of the court; the old doorways, which were narrow and small, are widened, their proportions not being improved thereby; and the lines of the roofs have been sufficiently altered to improve the composition without materially affecting the old appearance. Yet this is not the result of mere restoration, but only of "remaining true to the tradition on the traditional spot," although the plan of the present group of buildings, erected between the years 1884 and 1901, which appears with those of the periods of Louis IX. and Richelieu on Plate VII. of the *Monographie* bears the notice "de la Nouvelle Sorbonne Restaurée Agrandie à Frais Communs par l'État et la Ville de Paris."

The new Sorbonne includes as well as the College of Theology those of Science and Letters, and it is in the spirit of the times that the two latter faculties should make the greatest demands for space in the new buildings.

Popularly the Sorbonne is known principally as the centre of the University of Paris, and secondly on account of its great hemicycle, which contains one of, if not quite the greatest of Puvion de Chavannes' decorative paintings. To architects generally it is a familiar instance of noble and modern design—the rarest of designs thinkable—a university building conceived as architecture distinguished from archaeology! To architects in France particularly it is known for what is always the thing dearest and nearest to their hearts—a wonderful plan, a magnificent solution of perhaps the most complex problem in planning which has been presented in modern times.

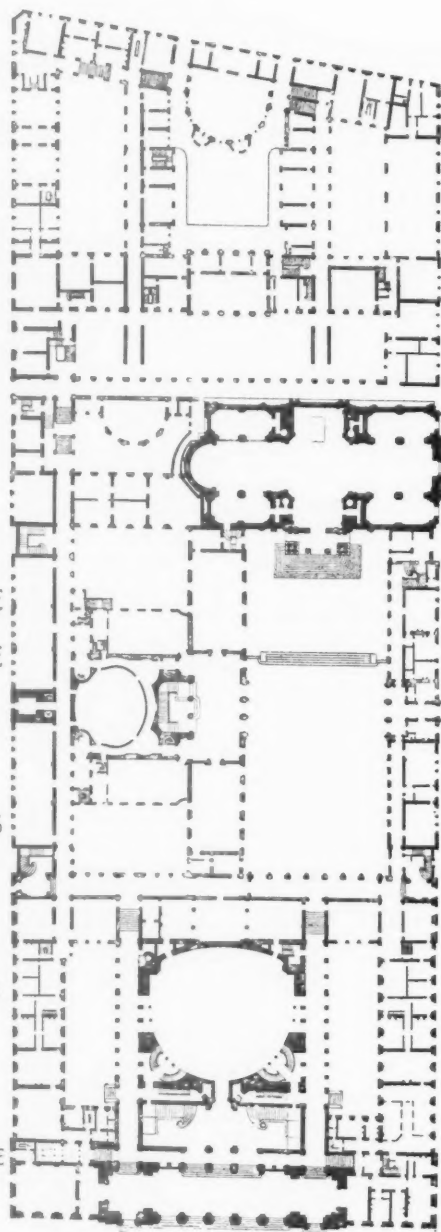
The introduction by Monsieur Gréard informs us that, besides the *dépendances* of the Academy and the offices of the colleges, the buildings devoted to direct instruction comprise twenty-two amphitheatres, including the great one which seats three thousand people; five libraries, two museums of art, sixteen examination halls, twenty-two study rooms or *salles des conférences*, thirty-seven rooms for the use of professors and tutors, two hundred and forty laboratories furnished with apparatus and equipment of every desirable sort. One has to think of all this appearing in some "Conditions of Com-

\* The illustrations which accompany this notice are reproduced from M. Nénot's book to a diminished scale.

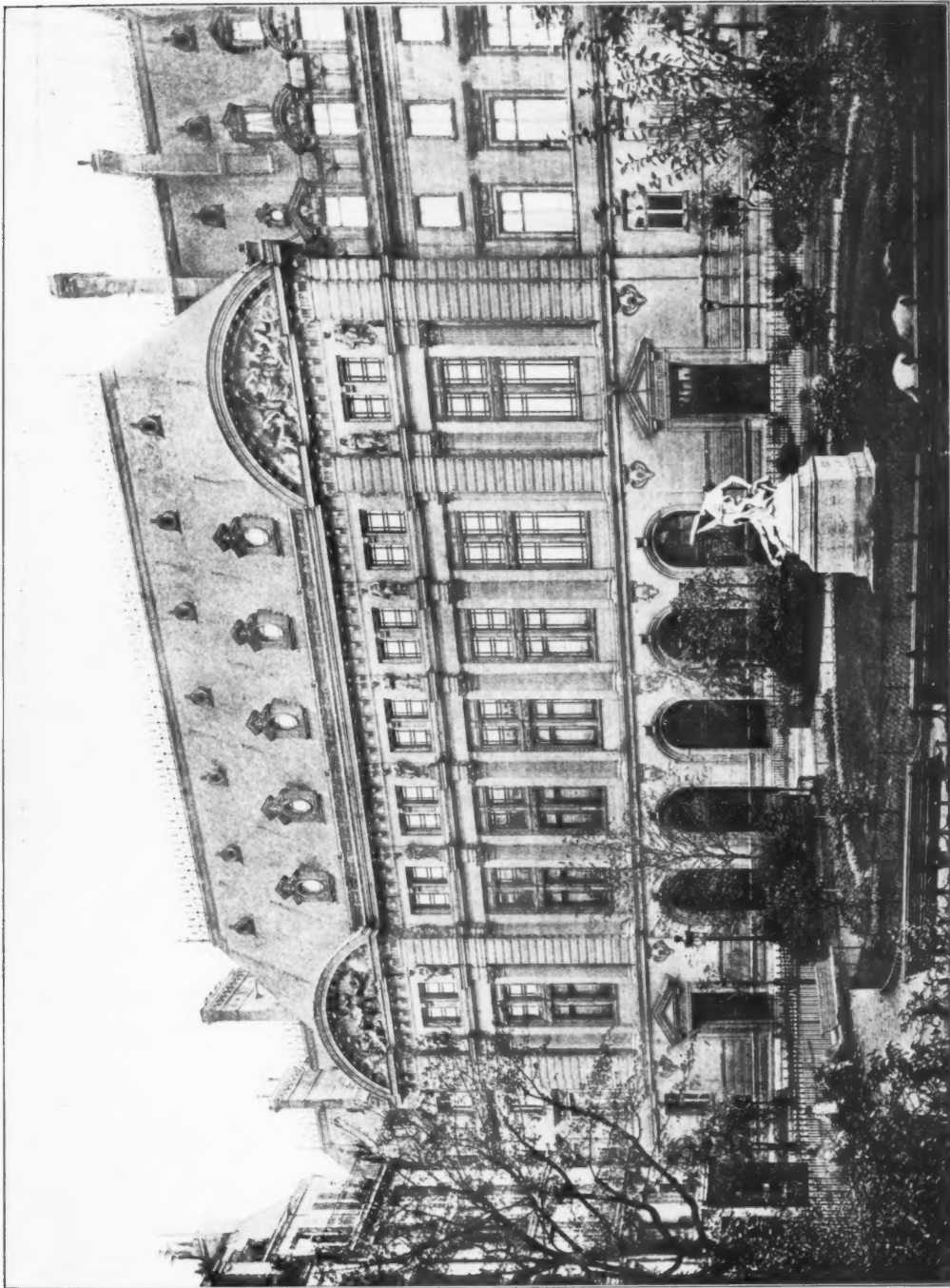


PLAN  
DE LA  
NOUVELLE SORBONNE  
RESTAURÉE AGRANDIE  
A FRAIS COMMUNS  
PAR L'ÉTAT  
ET LA VILLE DE PARIS  
COMMENCEE LE  
5 AOÛT 1885  
TERMINÉE EN 1900

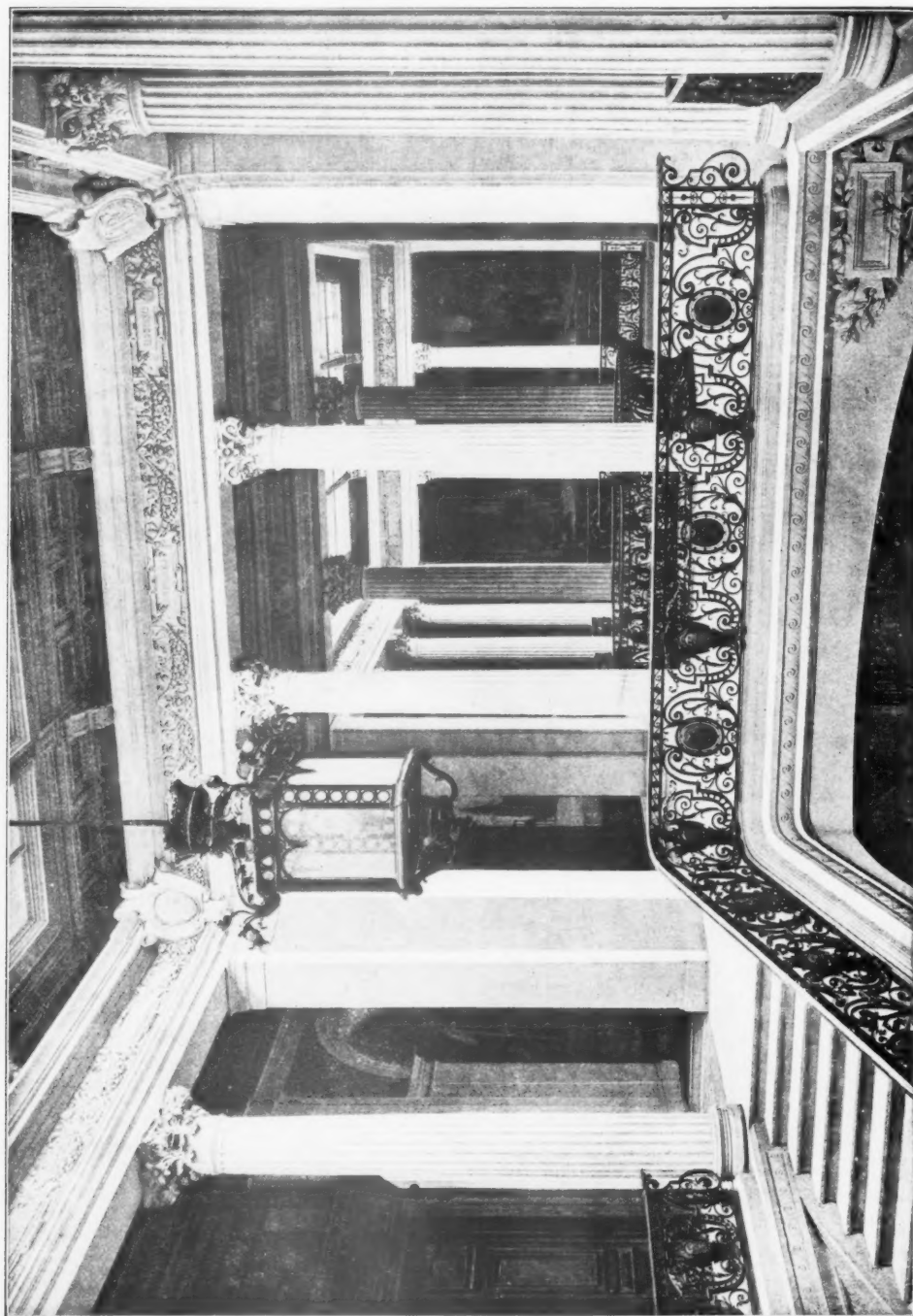
H·P·NÉNOT  
MEMBRE de L'INSTITUT·ARCHITECTE



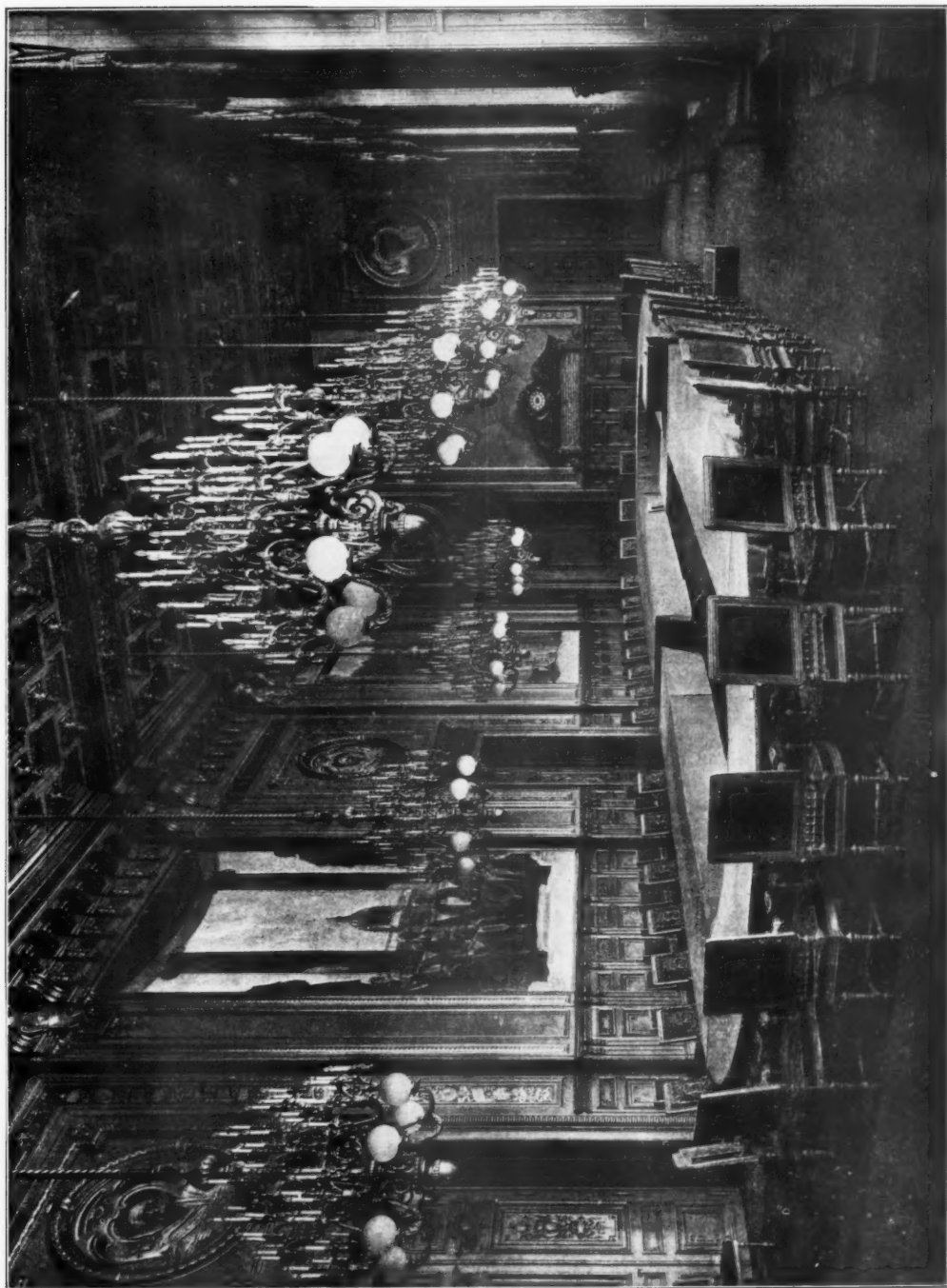




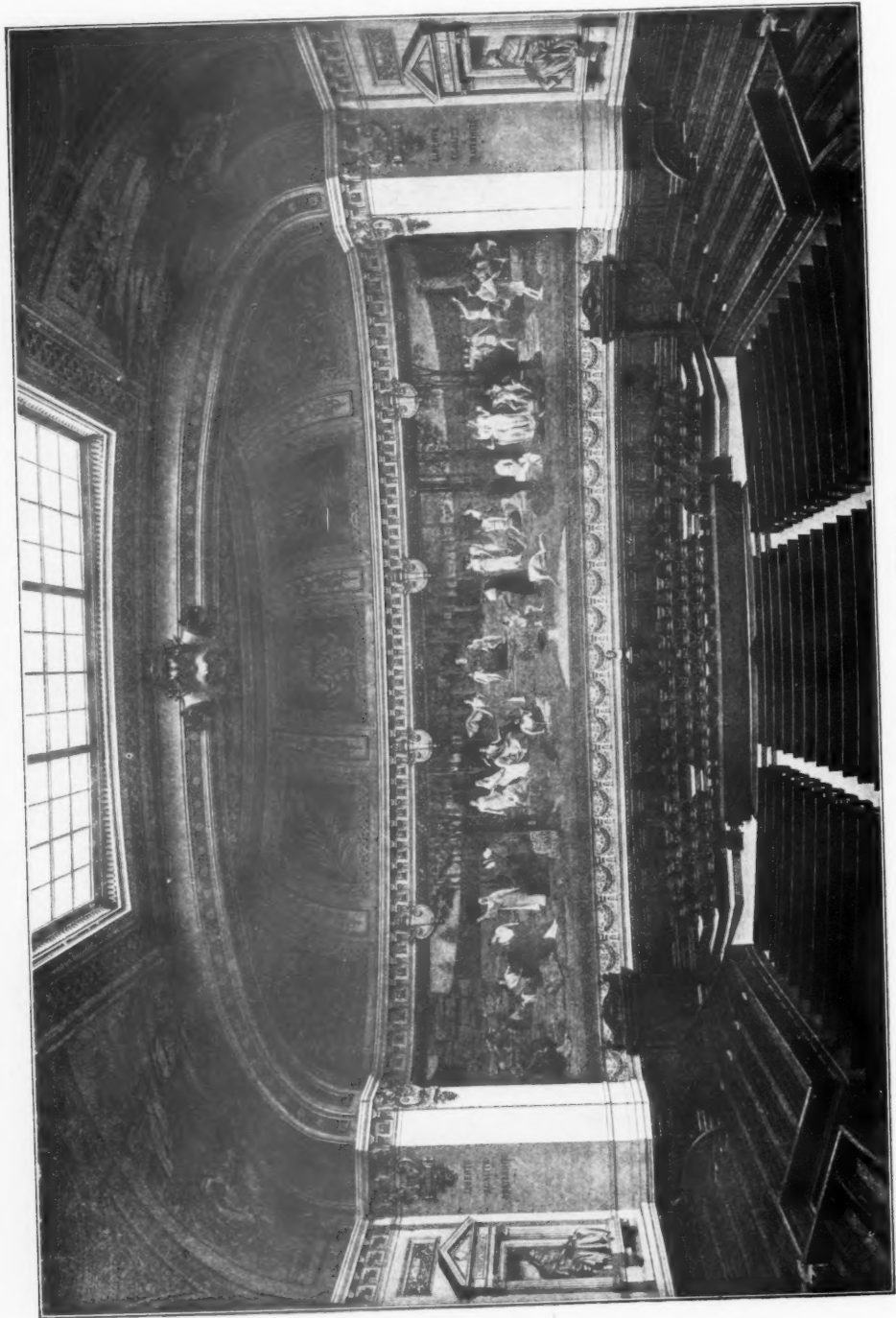
THE NEW SORBONNE : PRINCIPAL FRONT.



THE NEW SORBONNE: THE GRAND STAIRCASE FIRST FLOOR.

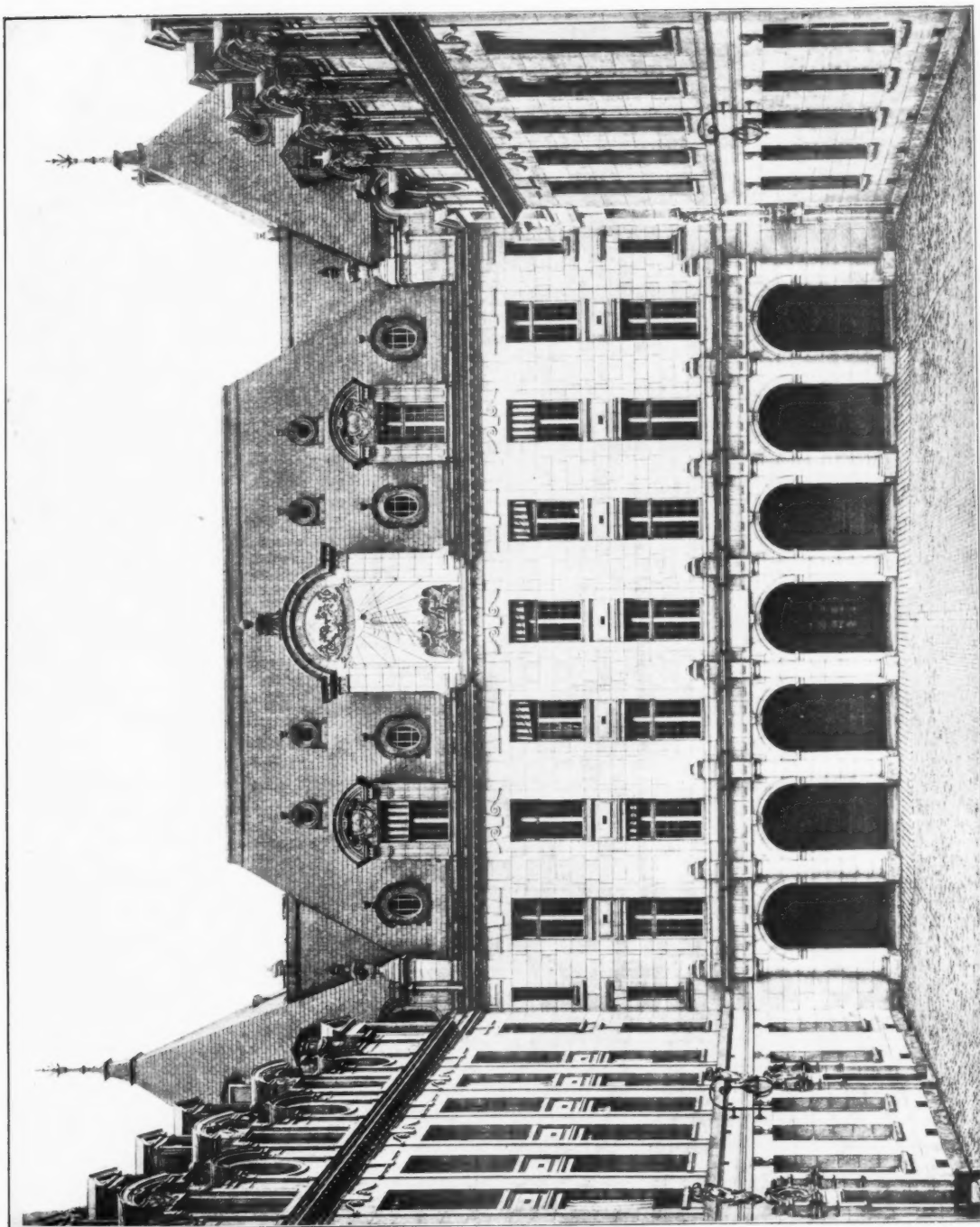


THE NEW SORBONNE: COUNCIL CHAMBER.



THE NEW SORDOSSE: GRAND AMPHITHEATRE.





THE NEW SORBONNE : COURTY OF HONOUR.

petition" to obtain some faint idea of the number of sleepless nights which must have been required to evolve the masterly arrangement presented upon the five double-page, beautifully engraved plates reproducing the executed plans. Then perhaps one turns to the sections to see how the planning "works up," and finds it to be amazingly simple.

So, too, one finds the elevations, and with the single exception of the Salle du Doctorat in the Faculté des Lettres, where M. Nénot has "let himself go" in the decorations, the interiors also. Even where the planning has presented the greatest difficulties it has been handled with clear vision; there is no knuckling under to them—they are not admitted to be controlling, but are themselves controlled, studied, employed—absolutely mastered—by the architect, who has made himself, as should always be the case, the prevailing spirit throughout.

It is the thorough competence of the creative artist which stands to the fore in every illustration of this illuminating work—the ability to express, and the good fortune to possess useful ideas replete with common sense, characteristic of the true artist to an extent that is not characteristic of men of any other calling whatever—the critical opinion of novelists (who make most of the common public opinion) to the contrary notwithstanding. Second only to this and consequent upon it is the clean-cut, enlightened male character of the edifice. How well it escapes the antiquated and anile aspect of so many of the new buildings for similar purposes in the countries dominated by the Anglo-Saxon! How well it disengages itself from the swaddling-clothes of the narrow sentiment which demands that the architect should for ever be

The idiot who praises in enthusiastic tone  
Every century but this!

The Sorbonne is one of the buildings worth a trip to Paris to see; but to those of us who find such trips luxuries we must dispense with, the book in hand will be found a substitute that is not a bad one. And those who know their Paris as well as they know their way home will find it an interesting record of one of the finest modern buildings of the "Gilded Metropolis," and a valuable acquisition to the R.I.B.A. Library.

FRANCIS SWALES.

#### ITALIAN RENAISSANCE SCULPTURE.

*Renaissance. The Sculptured Tombs of the Fifteenth Century in Rome, with Chapters on the Previous Centuries, from 1100. By Gerald S. Davies, M.A. Lond. 1910. Price 21s. [John Murray.]*

This fine volume deals with a subject hitherto somewhat neglected by English writers, and, although the research work of British and foreign critics is acknowledged, it is obviously the result of an exhaustive study of the long list of monuments

described. As the author says, these tombs, although they cannot claim artistic equality with those of other Italian cities, such as Florence for instance, are of supreme interest historically; and, indeed, a good history of the period might be written from them alone.

Although the number of tombs noticed by the author is very considerable, it is probable that many more have been lost through accident, violence, or carelessness—Bramante himself being held responsible for many acts of vandalism during the preparations for the new St. Peter's—and of those which remain many have been built up from fragments, neglected for many years, so that in some cases even the effigy which belonged to one tomb may be found resting upon another, while the lesser details, figurines, pilasters, cornices, &c., have been transposed with even greater freedom.

The introductory chapters deal with the early work of the marmorarii and of their descendants the Cosmatesque masters of the twelfth and thirteenth centuries, with their white marble work inlaid with glass mosaic and coloured marbles. The lack of examples in Rome of fourteenth-century work, due in a great measure to the absence of the Papal Court, is mentioned and made the more remarkable when we remember that in other parts of Italy master-works were produced which make this one of the most notable centuries of Italy.

The tombs illustrated have, of course, considerable architectural as well as sculptural interest, and generally take the form of a sarcophagus, carrying the recumbent figure, with or without an architectural framework of pilasters—fluted, arabesqued, or wide and containing niches for figures—and entablature often crowned by a segmental or semi-circular pediment or a deep coffered arch. Colour is admirably used in several examples. The variety in detail of the designs is very great, in many cases statuettes of saints and the Virtues and appropriate reliefs or frescoes being introduced. The inscriptions are, as a rule, rendered in fine lettering on panels, either below or on the front of the sarcophagus; that on the tomb of Antonio Chivave in the Lateran is a particularly fine example.

In addition to these elaborate monuments there are many flat gravestones or slabs in high or low relief, a fine series existing in the pavement of S. M. del Popolo. The volume is divided into two parts, the first dealing with the tombs generally and the artists who produced them—Donatello, Filarete, Paolo Romano, and the great "botegas" of Bregno, Dalmata, &c. It is noteworthy that whereas the tombs in Florence and other cities often commemorate men of the burgher class, the soldier, and merchant, in Rome they are, almost without exception, memorials to ecclesiastics.

In comparing the work of the fifteenth and sixteenth centuries the author says: "It appears to be the law, that stages of art which have to struggle for their means of expression will, perhaps, through

the very restraining, reserving, purifying influences of that struggle, tell you their tale, express their ideas more appealingly and, after all, more expressively than the same art when it has reached, later on, its full powers of speech and expression." A striking example of this failure to impart expression is afforded by two tombs in the Popolo by Sansovino: those of Gerolamo Basso, a man of honourable life living in a difficult age, and Ascanio Sforza, a typical prince-cardinal of the day, two natures and lives which might have inspired great conceptions. And yet these two tombs are almost identical in design, "there is nothing about them to suggest that the two men were of very different character or of any special character at all." "One wonders what sort of allegories Michelangelo would have created out of the lives of two such men."

The utility of the volume is greatly increased by the second part, which includes (1) an alphabetical list of Roman churches which contain notable monuments; (2) a chronological list of the most important tombs in Rome; and (3) a section dealing with the principal tombs of Rome from 1100-1500, arranged under churches and with short biographical notices.

Although a considerable portion of the book is devoted to historical accounts of the lives and times of the famous men commemorated, which prove that Mr. Davies has a rare knowledge of the period, but which are perhaps of lesser interest to us, the beautifully reproduced photographic illustrations of nearly one hundred picked examples, together with sympathetic and appreciative descriptions and criticisms, combine to produce a delightful volume well worthy of a place among the works on the Italian Renaissance in any architect's library. The book throughout is produced in the excellent manner we associate with Mr. John Murray's name.

LESLIE WILKINSON [A.].

#### FOUNTAINS ABBEY.

*The Ruins of Fountains Abbey.* By the Rev. A. W. Oxford, M.A., M.D., with illustrations and photographs by J. Reginald Trulove, A.R.I.B.A. 6 x 4. vi, 245 pp. 103 illustrations. Sm. 8s. 1910. Price 3s. 6d. net. [Henry Frowde, Oxford University Press.]

In the words of the author's prefatory note, "this little book is an attempt to put in simple language for the unlearned the results of the investigations of the ruins made by Mr. W. H. St. John Hope and Mr. J. Arthur Reeve." Mr. Hope's monograph is still sold as a separate publication by the Yorkshire Archaeological Society, though the writer of this book only gives an incomplete bibliographical reference to it; and Mr. Reeve's work is still current. Mr. Hope's descriptions are always as clear as they are scientific, and one wonders why his work should be diluted for the benefit of those who require to have the word "buttress" defined for them (p. 10) by a writer

who uses the word pier "for a large column" (p. 10), and defines a rebate as a groove (p. 36); and one wonders, too, what a University Press is doing in this galley. A description of a church may either be written in chronological or topographical order; but if the latter method is adopted, it should be preceded by an outline of the history of the building. This, however, is not Mr. Oxford's method. He begins by placing his readers at the crossing, and describes what is to be seen from this point. The result is that the first thing to be mentioned is the tower, which was the last thing built, and lies quite outside the scheme of the church. Mr. Oxford says (p. 27) that it was Mr. Hope who first discovered that the nave of a Cistercian church was used by the *conversi*; but in the *Voyage littéraire de deux religieux Bénédictins* of 1717 we are told of Clairvaux that its "nef étoit autrefois remplie de trois rangs de chaires de chaque côté, pour placer les frères convers durant l'office" (part i, p. 99); and the use was suggested by Viollet-le-Duc in his *Dictionnaire* (i. 268). Some of the plans in the book seem to be based on Mr. Brakspear's fine plan, which does not appear to be even mentioned. The book has two appendices, but no index. JOHN BILSON [F.], F.S.A.

#### THE LAW OF BUILDING AND DILAPIDATIONS.

*The Law of Building and Dilapidations.* By Ernest Todd, of the Inner Temple and Western Circuit, Barrister-at-Law. 8s. Lond. 1907. Price 15s. [Fyfe & Spottiswoode.]

With *Hudson's Building Cases* and *Roscoe's Building Cases* before me, I can safely say that Mr. Todd has responded to a want, and has compiled a work which will prove of great use and service to clients, to architects, to surveyors, and to contractors. Mr. Todd not only sets forth very clearly the law relating to the respective obligations and responsibilities of the parties engaged in the sometimes troublous operations connected with building, but he manages to illustrate his subject so aptly that the reader is at once placed in possession of that knowledge which should enable him to steer clear of the pitfalls which so frequently await him in the pursuit of his calling.

Mr. Todd evidently looks with favour upon the Form of Contract issued by the Royal Institute of British Architects; he traverses that document with a keen critical eye, and analyses the conditions with a practical mind, which must be extremely useful to those, and they are many, who are bound by conditions which are at times signed in haste to be repented of at leisure.

In chapter 2, p. 5, Mr. Todd does not appear quite conclusive as to an allowance for extras where the contract having provided for an order in writing, such order was not produced; but I think a contractor would stand a poor chance before an arbitrator on such a point.

Chapter ii. is devoted to "Variations and Extras," and twelve pages are occupied by most useful information on these subjects, with references to decided cases.

Chapter iii. deals with "Specifications and Bills of Quantities"; whilst Chapter iv. sets forth with precision "The Architect's Powers and Duties," accompanied by decided cases on this so frequently contested ground of dispute.

Chapter v. discourses on "The Progress and Completion of the Works," teeming also with decided cases so useful to the man who is thinking of going to law; and Chapter vi. relates to "Damage to Persons and Property," a matter which is sometimes lost sight of by the architect and by the contractor, until they are reminded of it by some heavy compensation claim. On p. 100 Mr. Todd states that the City of London is excepted from the operation of the 1894, 1898, and 1905 Acts, but I believe that certain portions of those Acts—at all events of the 1894 Act—are within the purview of the district surveyors, and therefore all those Acts are not excepted. In subsequent pages Mr. Todd refers to questions of rights of light and disputes with adjoining or neighbouring owners, but I am not in accord with him as to the liability of a contractor with respect to rights of light in connection with building works being carried out by a contractor as such. My own experience has been that all these cases have been fought by, and at the expense of, the building owner.

Chapter vii. is a very interesting one, being on "Certificates and Payments," and it again is well illustrated by decided cases. The references to "Prime Cost and Provisionals" in the same chapter are acceptable, and the difference in meaning between p. c. value and provisional sums is properly dealt with.

Chapter viii. opens up another branch of the architect's and surveyor's business, viz., "Dilapidations," wherein much valuable matter is brought before us; and Chapter IX. deals with "Arbitration and Procedure" in a way which will be found very useful to all likely to act in the capacity of arbitrator.

The work is completed by an Appendix full of most useful information. Mr. Todd has evidently endeavoured, and in my opinion quite succeeded, to produce a book in which nothing is left out which may be of service to those engaged in the complicated, and sometimes costly and vexatious, matters connected with bricks and mortar, and to those I most heartily commend the perusal of Mr. Todd's book.

WM. WOODWARD [F.].

## CONCRETE AND CONCRETE TESTS.

By ALFRED E. CORBETT [A.].

Read before the Manchester Society of Architects,  
12th January 1910.

TO attempt to deal with every point in the making of concrete is quite unnecessary, considering the great quantity of information available in various books and periodicals. There are, however, gaps in this information; and when, about a year ago, my partners and I had to select materials for some 5,000 or so cubic yards of concrete for the reinforced concrete construction of the Manchester Y.M.C.A., we found an almost complete lack of available information as to the relative efficiency of local materials.

I thought that this gap might be to some extent lessened if I devoted this Paper to notes on the series of tests which we then undertook, consisting of some two hundred crushing tests of concrete (carried out at the Municipal School of Technology) and over 450 tensile tests of cement. My notes only refer to the concrete which is suitable for reinforced concrete, and not to the reinforcing methods or materials.

Our object was to obtain, at the minimum cost, an impervious concrete with a crushing strength of 154 tons per square foot when twenty-eight days old, or 2,400 lbs. per square inch, this being the standard laid down in the R.I.B.A. Report and assumed in our calculations.

This standard is for concrete of the type required for reinforced concrete construction, but tested in plain blocks, without any steel reinforcement; and it is used with a factor-of-safety of four. With steel reinforcement the strength is, of course, much greater.

It may be interesting to compare this strength of 154 tons per square foot for plain concrete at twenty-eight days old with the crushing strengths in the R.I.B.A. Report on Brickwork, where Blue Staffordshire bricks in cement averaged 135 tons per square foot, and London stocks in lime mortar only gave 18 tons per square foot, at five months old.

The most important essential is to get very good English Portland cement. This must be at least as good as the British standard, and should be very considerably better.

There is no doubt that the most practical test is the crushing test on cubes or prisms of either concrete or cement and sand, as this tests the actual quality which we depend on in the real building.

From tests of this kind (described later), carried out with six brands of cement, we had no hesitation in selecting cement "A," i.e. Messrs. G. & T. Earle of Hull's "Pelican" brand of cement, and this is being used on the work. I may note that this cement is so extremely finely ground that on



a mesh of 32,400 holes to the square inch it only leaves a residue of 3 per cent., instead of the 18 per cent. permitted by the standard specification.

As the whole safety of the structure depends on the cement it is advisable to carefully test samples from every consignment. For these acceptance tests it would be too expensive to crush cubes from each consignment, but after the cement has been selected on the results of crushing tests it is quite possible to ensure that the quality is kept up by means of tensile tests of sand briquettes, which are easily carried out on the works.

For sand tests it is necessary to use "Standard Sand," i.e. Leighton Buzzard sand, which passes through a  $\frac{1}{16}$ -inch mesh and is retained on a  $\frac{1}{32}$ -inch mesh. Three parts of sand by weight are mixed with one part of cement, and lightly rammed with a 22-oz. rammer.

To get correct results the making and storing of briquettes should be done in a room of which the temperature is kept between 58° and 64° F. In our case all briquettes and concrete cubes were made on the site, under somewhat rough-and-ready conditions, and the temperature was often low, so that our results are not ideal, but are enough to satisfy us as to the uniformity of the cement as delivered.

Fig. 1 shows by diagram our results for the three months during which we made both sand and neat briquettes. The sand briquettes average 286 lbs. at seven days, 349 lbs. at twenty-eight days, and 445 lbs. at three months old. This twenty-eight-day sand average is 40 per cent. above the British standard. (The three months' results are not plotted, as they are incomplete.)

For comparison is added the result obtained in the manufacturers' laboratory, where more skilful handling and an even temperature have naturally given higher figures, viz. 359 lbs. at seven days, and 473 lbs. at twenty-eight days, the latter being 89 per cent. above the standard.

I may mention that the manufacturers' compression tests at twenty-eight days for 3 to 1 sand cubes averaged 292 tons per square foot, or nine and a half times as much as the tensile strength—a result which was confirmed by the few similar tests which we made.

Our neat cement briquettes at seven and twenty-eight days averaged 619 lbs. and 663 lbs. respectively. The manufacturers' own results for the same period averaged 672 and 767 lbs. All these neat briquettes were made by thumb pressure only, without any ramming at all. (The manufacturers also tested briquettes which had been rammed into the moulds with a small brass rammer, the results averaging 15 per cent. better than the thumb-pressure briquettes, and also neat compression cubes, which averaged 615 tons per square foot, or 10.8 times as much as the rammed tensile briquettes.)

There is something very mysterious about the behaviour of neat cement briquettes, as the long-date tests of even the best cement often do not show any

increase in strength! In our own tests the three months' results averaged 648 lbs., or less than the twenty-eight-day tests; although the three months' sand tests showed an increase of nearly 30 per cent. over the twenty-eight-day. As this phenomenon is puzzling the leading experts of the world, we need not waste time in attempting to discuss it. Our own conclusion was that it is safest to trust solely to sand tests, which are quite reliable; and for nearly three months we have stopped making any neat briquettes.

There is no doubt that cement testing is a delicate operation, and that the personality of the operator has a considerable effect on the result.

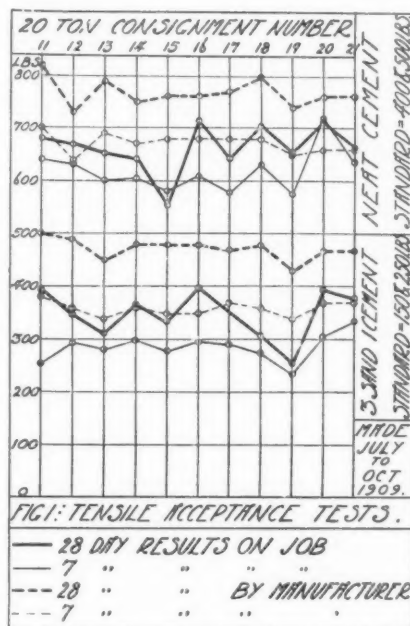


FIG. 1: TENSILE ACCEPTANCE TESTS.

Messrs. Marsh & Dunn advise that for acceptance tests the *highest* of a number of test results should be taken, instead of the average, assuming that the highest is most nearly what the cement is capable of doing, whereas the lower results are most likely due to careless handling. Our highest results from each consignment averaged 374 lbs. for twenty-eight-day sand and 715 lbs. for twenty-eight-day neat; the latter being within 7 per cent. of the manufacturers' result.

It is possible to get a cement which gives excellent strength results, and yet is very dangerous to use owing to its expansion while hardening. To guard against this the *Chatelier* test should be used, in which the effect of time is rapidly obtained by immersion in boiling water for six hours. On

its introduction many manufacturers protested that it was too stringent, and could not be complied with, but it is now generally regarded as being of the greatest value. The British standard permits an expansion, by this test, of 10 mm., and the fact that we have never found more than  $1\frac{1}{2}$  to 2 mm. on our work shows that manufacturers have been more than equal to the demand on them.

There has been much discussion recently as to the reliability of similarly accelerated tests for strength, but as yet they are not generally accepted.

The practice of spreading cement out to air before using it, which used to be generally specified, is now quite out of date for good cement. If a cement will pass the "Chatelier" test it is ready for immediate use, and exposure to air is detrimental to it.

We must now consider the aggregate, which is divided into coarse aggregate, passing through a  $\frac{3}{4}$ -inch mesh and retained on a  $\frac{1}{4}$ -inch mesh; and fine aggregate, or sand, passing through a  $\frac{1}{4}$ -inch mesh.

I will only refer to aggregates which we have actually tested.

Our first tests were on twenty cubes of concrete made with several stones and crushed brick, but the results were so disappointing that we determined on a more comprehensive series of tests which should give us reliable data as to both coarse and fine aggregates.

After inquiries as to what stones had been used successfully for concrete we selected five varieties: Penmaenmawr granite; Chatburn limestone, and three coarse local sandstones, Greenfield, Whitworth, and Fletcher Bank.

The crushed stone was separated from its own sand, or fine crushings, by riddling with a  $\frac{1}{4}$ -inch mesh, and then five kinds of concrete were made by re-combining each stone with its own sand in the proper proportion. Three other kinds of sand, local sand, Runcorn sand, and broken brick sand, were also used, so that altogether we had seventeen different mixtures of stone and sand; and of each mixture we made one 6-inch cube with cement "A" and two 6-inch cubes with cement "B."

The local sand (from Irlams-o'-th'-Height), like very nearly all Manchester sands (with an exception to be mentioned later), is full of little black specks of some bituminous matter which develop into big drops of a black oily appearance, and very much injure the cement. I have heard that they also cause expansion, but have no experience of this. Runcorn sand is a medium coarse sand dredged out of the river Mersey, and for this set of tests was free from shingle or small stones. For the later tests, and for the actual work, it contained a good deal of fine shingle, which apparently increased the strength of concrete by about 12 per cent.

The broken brick sand was crushed by hand from ordinary hard common bricks, and one-sixth was retained on a  $\frac{1}{4}$ -inch mesh.

The batches of concrete were made in the proportion of one of cement, two of sand, and four of aggregate, by volume (or approximately 1:2.8:4.8 by weight).

It is important in specifying to state the proportions separately, as two volumes of sand and four

# PROPORTIONS 1:2:4: BY VOLUME

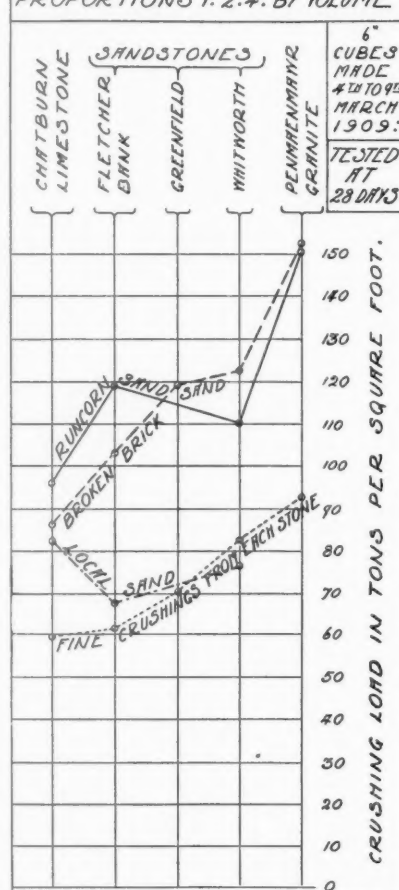


FIG. 2: TESTS ON 17 MIXTURES OF 4 SANDS & 5 STONES.

volumes of aggregate would make rather less than five volumes if mixed together, so that a 1:2:4 mixture is really a trifle richer than what used to be described as 1 to 5 concrete, and to speak of it as 1 to 6 may mislead either you or your contractor as to price.

Fig. 2 shows the crushing strengths of these cubes

arranged to indicate the value of each sand, as well as each aggregate.

Obviously the Runcorn and broken brick sands are much superior to either the local sand or the crushed stone sands.

For simplicity I have only shown the results with

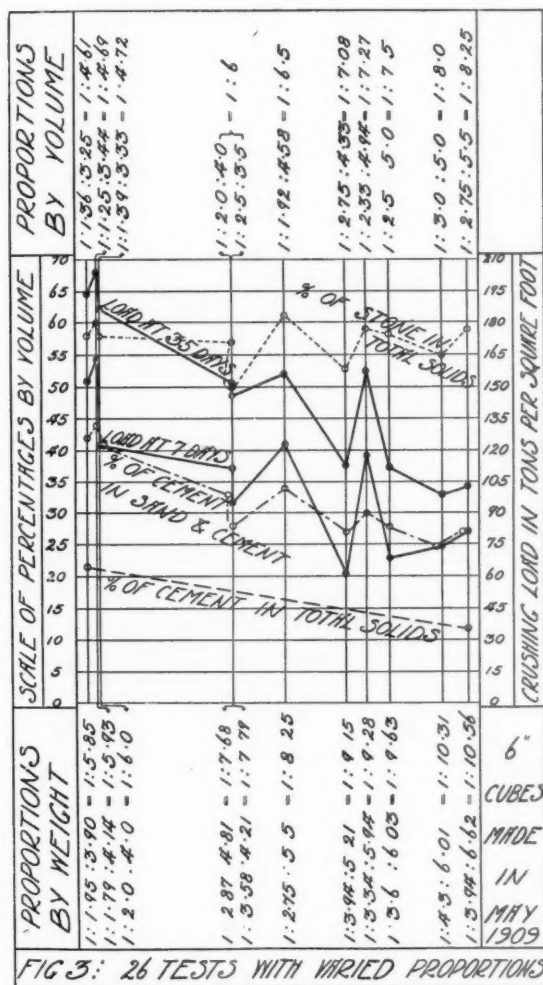
kind of sand and six different brands of cement. The crushing loads per square foot at twenty-eight days with cement "A" were 205 tons for Runcorn sand, 197 tons for broken brick sand, and only 51 tons for local sand; the other cements giving similar comparative results, though lower. Thus the Runcorn sand proved somewhat stronger, and as we considered that it would also be a more uniform article than broken brick sand, owing to the difficulty of ensuring that nothing but hard bricks should go into the crushing machine, we adopted it for the work.

At first sight it would appear that the strength of all these concretes was insufficient to meet our need for 154 tons per square foot, the reason being that these test cubes were made early in March, and cold nights were frequent and checked their hardening. We did not realise the difference this would make until we had crushed all the cubes made with cement "A," but we only crushed one out of each pair of cubes made with cement "B" at twenty-eight days old, and crushed the others at forty-two days old, assuming this to be nearly equal to twenty-eight days of summer weather. The average results of the five concretes made with cement "B" and Runcorn sand was 30 per cent. better at forty-two days than at twenty-eight days, so that assuming a similar increase of strength if the stronger cement "A" were used we were certain to get approximately the required strength from either of the three sandstones. The limestone was out of the question (we should have had grave doubts as to using it even if it had proved stronger, owing to its weakness as a fire-resister), and the granite, though giving the best result, was too costly to consider unless the other stones had failed.

Of the three sandstones, various considerations, including the preliminary test results not recorded here, led to the selection of Greenfield stone. Almost immediately, however, we found an almost identical stone, under the name of "Bolton granite," which was, if anything, somewhat better, and we used it for most of the work, though we found it useful to have two quarries available from which good stone could be obtained.

We had now selected materials which we knew to be good. There remained the question whether by any variation in the proportions it was possible to secure either a better concrete or a smaller proportion of cement.

Fig. 3 tabulates the results of twenty-six tests with eleven different proportions of concrete, all made with "Bolton granite" sandstone and Run-



cement "A" which averaged just 50 per cent. higher than those with cement "B." As the latter is a well-known brand it seems possible that the bag sent to us for testing was not quite up to their usual standard.

As the cement and sand are of such primary importance, we prepared a number of four-inch cubes of sand and cement, 1 to 2 by volume, using each

corn shingly sand. (In this diagram the proportions and percentages are plotted according to volume, as required by the R.I.B.A. Report, but as many investigators give their proportions by weight I have added the weights at the bottom of the diagram.)

The strength of concrete depends on its density, and if the aggregate contain a large percentage of voids an extravagantly large proportion of cement will be required to fill up the voids and make a dense mixture. The ideal is to have enough smaller material, say  $\frac{1}{4}$ -inch, to exactly fill the spaces between the  $\frac{3}{4}$ -inch stones; just enough  $\frac{1}{8}$ -inch material to fill in between the  $\frac{1}{4}$ -inch; and so on down to the very finest grains of sand. Then just enough cement paste must be added to fill the very small crevices between the finest grains of sand.

Careful experiments have been made in America to determine the exact proportion of each size of material requisite to obtain the greatest possible density. (See Summary in *Concrete* for September 1907.) To apply these scientific results practically it would be necessary to have all the aggregate, including sand, screened through perhaps six or eight different sizes of mesh—say, for instance,  $\frac{1}{16}$ -inch,  $\frac{1}{8}$ -inch, and increasing by eighths of an inch up to a  $\frac{3}{4}$ -inch mesh—and to use a certain fixed quantity of each size of grain in every batch of concrete. If this were done, and the mixing and placing were very perfectly carried out, an exceptionally small proportion of cement would make an excellent and very uniform concrete. Special plant and care would be necessary, but on large works the saving in cost of cement and the reliability of the product would be likely to outweigh the extra cost of working.

A less perfect method would be to make a mechanical analysis of samples from each consignment of crushed stone and sand, by riddling into six or eight sizes of grains. It could then be seen what quantities of certain sizes of grain should be added to bring the whole up to an ideal proportion, and a little specially riddled stuff, or possibly a little finer or coarser grained sand, would supply the deficiency. I cannot give you any actual results of such scientific proportioning.

The usual practice is to be satisfied with three divisions, viz. cement, sand, and stone from  $\frac{1}{4}$  inch to  $\frac{3}{4}$  inch, and there is an easy method of ascertaining what proportions of these three materials will give the densest mixture, by taking the same total weight of material, combined in different proportions and mixed together with water, and ramming into a mould. The mixture occupying the smallest volume is the densest concrete.

After experimenting on these lines the most ideal mixture we made into cubes was 1 : 2.34 : 5.47 by volume (not shown in Fig. 3 as the conditions were not identical), which gave an excellent result in proportion to the cement used, but needed so much

ramming to close up the voids that it was an undesirable mixture for practical use.

Some excess of cement and sand is absolutely necessary to make the concrete work sweetly, and in reinforced work a rather larger excess is needed than in mass concrete, unless an unusual amount of ramming is insisted on. I do not know any way of determining what excess of sand is necessary except the actual "feel" of the concrete while it is being mixed and moulded.

In our tests we noted how each mixture behaved, and decided that for our materials two volumes of sand to four volumes of aggregate was a workable mixture, and this, with one of cement, gave the desired strength of 154 tons per square foot. (The proportions by weight are 1 : 2.8 : 4.8.)

The batches were made with one bag of cement containing one cwt., or  $1\frac{1}{2}$  cubic feet, of cement; three cubic feet of sand, and six cubic feet of coarse aggregate, which we found produced  $7\frac{1}{2}$  cubic feet of wet concrete.

As it happens, this is the generally adopted proportion which we used for the previous set of tests, but the investigation was well worth making, as some other proportion might have proved better. It also emphasised a point which may perhaps best be grasped by considering the fine aggregate or sand and cement as forming mortar, which binds together the coarse aggregate. The more densely the aggregate will pack together the less mortar is required to fill the voids, and the less cement is required for a given strength of mortar.

Fig. 3 proves that it is the proportion of cement in the mortar (shown by chain dotted line), rather than the proportion of cement to total aggregate (shown by long dotted line), which chiefly governs the strength of the concrete.

For instance, the  $7\frac{1}{2}$  and  $6\frac{1}{2}$  to 1 concretes are actually stronger than the 6 to 1 concrete, because the slightly less quantity of cement which they contain is combined with a considerably less volume of sand, and so forms a richer mortar. Also the high percentage of stone produces a denser mixture.

If we take the central group of six mixtures, varying from 1 to 6 to 1 :  $7\frac{1}{2}$ , and average the three best results and the three worst, we find that the three best average barely 4 per cent. more cement than the three worst, but in the proportion of cement to sand the increase is 16 per cent., and this increase of 16 per cent. in the richness of the mortar produces an increase of 25 per cent. in the strength of the concrete.

In other words, provided that we have sufficient sand to fill up the voids in the coarse aggregate, the less additional sand we use the stronger will be the concrete, for a given proportion of cement.

It is very difficult to keep exactly to the desired proportions, and to avoid an occasional excess of sand, and consequent weakness. Wet weather tends to clot the sand together and prevent it passing through the holes of the screening machine.

Even if the stone leave the quarry absolutely clean a small quantity of sand is produced on the journey by attrition, due to the jolting of the railway truck, unless the stone is a very hard one. Careful inspection of every load is necessary, and if too much sand appears either a sample should be riddled with a  $\frac{1}{4}$ -inch mesh, the proportion of sand ascertained, and a correspondingly less amount of sand added; or, better still, the whole should be riddled free from sand.

It is evident that even in the case of a stone the fine crushings of which are suitable for use as sand, such as Portland stone, it is very important to first screen out the fine stuff entirely, and then add it in just the right proportion, as you cannot depend on a crushing machine always producing the same proportion of fine stuff.

It is imperative for reinforced work that there shall be no voids whatever in the concrete, as—apart from its effect on strength—any honeycombing gives an opportunity for future corrosion of the steel reinforcement.

On this account a very wet mixture of concrete is generally preferred, rather than a dryer one, as the sloppy concrete is not so dependent on ramming for its density, although it always should be rammed, even if only to remove air bubbles. Experts have not yet agreed on any definition of degree of wetness in concrete, so it is a matter for individual judgment.

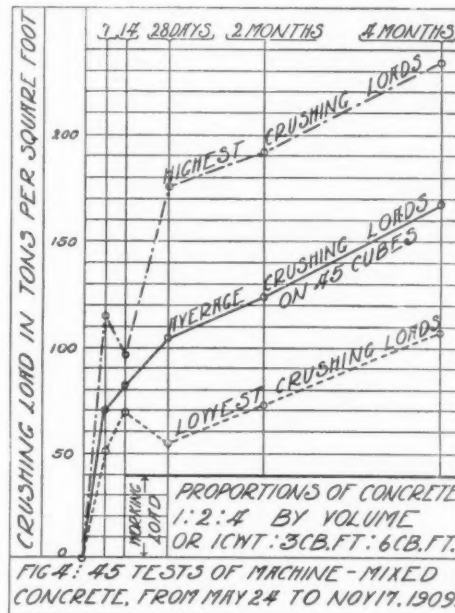
The mixing should always be done by a machine, those which do a batch at a time being better than continuous mixers.

Some experts lay stress on the importance of thoroughly saturating the stone before putting it into the mixer, in order to prevent its absorption of water after mixing. I think that this is only of importance where a somewhat closer-grained stone than ours is employed, as our small pieces of coarse sandstone would be saturated before they left the mixing machine, provided that a wet mixture is used.

We tested six cubes from a batch made with dry stone, and six with saturated stone, and at two and four weeks old the dry stone concrete was stronger than the wet, but at four months old they were exactly the same strength. Sample cubes of concrete from the mixing machine should be made every day throughout the work, and stored under damp cloths; and some of these, though not necessarily a large proportion, should be tested. It is not to be expected that these cubes will always be quite as good as the carefully-made experimental cubes, and it must be remembered that if the cubes are exposed to the open air a low temperature will delay hardening very materially, so that a concrete attaining a twenty-eight-day strength of 154 tons per square foot in summer might give less than half that result in twenty-eight days during autumn or winter, but it would eventually attain to the same strength.

Fig. 4 shows the results of crushing forty-five cubes taken at random from the daily sample cubes. The lowest results are no doubt largely due to excess of sand in the bit of concrete which happened to be selected for that particular cube. An occasional *excess* of sand is most difficult to prevent, but if there should ever be too little sand in a batch the workmen would at once complain, as it makes the concrete very difficult to work.

Most of the results are adversely affected to some extent by cold weather, and bearing this in mind I think we may fairly consider the results satisfactory, especially when we note how the



strength is still rising rapidly even at four months old.

Stress is very properly laid on the need for depositing concrete before it has begun to set, some specifications insisting that it shall be in position within ten minutes of mixing. The time depends on the cement and the weather, and after testing we decided that half an hour was perfectly safe, and that even an hour might elapse with little harm.

The initial set for our neat cement averaged two hours, and the final set nine hours, but apparently these times are extended when the cement is used in wet concrete. On a fairly mild day a portion of a batch from the machine-mixer was set aside, and two cubes were made from it every two hours, up to eight hours after mixing, the crushing results being as follows:—



(The actual setting times for the cement in this batch were  $2\frac{1}{2}$  and 10 hours).

Age at Test.	Time between Mixing and Moulding.				
	Fresh.	2 hours.	4 hours.	6 hours.	8 hours.
2 months . . .	192	174	150	126	160 (!)
4 months . . .	234	183	172	167	136

A previous test on concrete one hour old showed it to be actually stronger than fresh concrete, but this single test cannot be relied on.

Concrete such as we are using is practically water-tight, but sometimes absolute water-tightness is required, as for instance in our building where a 60-feet swimming bath has to be erected on the fifth floor. We, therefore, made some tests with "Medusa Waterproof Compound," both as to waterproofing and strength.

Boxes 12 inches high and 6 inches square outside on plan, with bottom and sides 1 inch thick, were made with three volumes of Runcorn sand to one volume of cement (*i.e.*, 4.3 to 1 by weight). This is a poorer mortar than we are using in the concrete, as we wished for a mixture which would not be quite water-tight with ordinary cement.

In one box the cement was mixed with 2 per cent. by weight of Medusa compound—that is, one half per cent. of the total volume of solids was Medusa compound.

When two months old the boxes were filled with water.

There was a very slight flaw in the bottom of the Medusa box, which however entirely closed up within three days, and after that the outside of the box was quite dry, and in three weeks the outside of the plain box was quite dry.

The water in the Medusa box fell at the rate of one-tenth of an inch per week during a period of eight weeks, with an extra quarter inch in the first week, while the water in the other box fell at the rate of  $3\frac{1}{2}$  inches during the first week, gradually lessening to half an inch during the eighth week; the total leakage in the second case being eleven times as much as in the first, a rather remarkable result to follow the addition of one half per cent. of solid matter. Doubtless, if evaporation had been entirely prevented, the difference would have been much more striking. The boxes were covered with a loose tile, and probably most of the loss in the Medusa box was through evaporation. It is interesting to note that the porosity of the box made with ordinary cement gradually closed up, so that in the eighth week there was only *one-eighth* of the leakage that there was in the first week. This is a useful characteristic often observed in concrete.

This Medusa material is said not to affect strength, but to satisfy ourselves we made nine tensile briquettes with cement containing 2 per cent. of Medusa and another nine with 10 per cent.

of Medusa, to get an exaggerated effect, though so high a percentage would never be actually used. The tensile results were as follows:—

Sand mixed with	Strength at 28 days.	Strength at 3 months.
Plain cement . . .	395	501
Cement + 2 per cent. Medusa . . .	348	446
Cement + 10 per cent. Medusa . . .	263	389

That is, the 2 per cent. mixture was 90 per cent. of the strength of plain cement, and for most uses of the material such a slight decrease in strength would be of no importance.

Until the building was well advanced we had not found any Manchester sand worth serious consideration, owing to the bituminous specks previously mentioned; but later on we obtained some rather fine-grained sand from Openshaw, near Manchester, for the purpose of setting the terra-cotta, for which Runcorn sand was too gritty; and tensile briquettes with this sand gave remarkably good results.

Whereas the Runcorn sand which we were using for concrete was 12 per cent. weaker than standard sand, at twenty-eight days Openshaw sand was 14 per cent. stronger than standard, the actual results being 333 lbs., 378 lbs., and 433 lbs. respectively, for three to one mixtures by weight.

This naturally led to further concrete tests, but there has not yet been time for any long-date results. An indication of the probable result was seen while making the cubes, as the relative specific gravities of the freshly-made cubes, with all Runcorn, half and half, and all Openshaw sand respectively, were 2.39, 2.423, and 2.427. This showed that Openshaw sand makes a slightly denser concrete, and so one would expect it to be stronger.

We have as yet only tested two cubes of each kind, at nineteen days old, and the results were practically equal for all three mixtures. Taking into account the tensile results and the density we have decided to use henceforth a mixture of half Runcorn and half Openshaw, and we hope that further tests will confirm this decision.\*

I am quite aware that from a scientific point of view our tests are very crude and incomplete, but in the absence of more precise information about the materials mentioned the facts that we have ascertained may be of value in saving the time of other investigators.

Few architects have either time or opportunity for really exhaustive research work, but doubtless many carry out occasional tests similar to ours, and by making the results common property we should very soon have a valuable set of facts to refer to.

\* Since the lecture single cubes three months old have been crushed, and the half and half and all Openshaw were respectively  $6\frac{1}{2}$  per cent. and  $7\frac{1}{2}$  per cent. stronger than the all Runcorn.—A. E. C.



9 CONDUIT STREET, LONDON, W., 12th November 1910.

## CHRONICLE.

### THE OPENING GENERAL MEETING.

The inaugural meeting of the session was held in the new meeting-room of the Institute,\* the largest of the three galleries in the rear of No. 9 Conduit Street which now form part of the Institute premises. The occasion was a specially interesting one to those who had taken part in or followed the proceedings of the recent Town Planning Conference, and there was a large attendance of members and visitors, including several ladies. The President had an attentive and very appreciative audience, his Address being frequently and warmly applauded. The Council had entertained at dinner the same evening the Earl of Plymouth [H.A.], Sir George Reid, Sir L. Alma-Tadema, O.M., R.A. [H.F.], Sir Alfred East, R.A. [H.A.], Mr. Solomon J. Solomon, R.A. [H.A.], Mr. Seymour Lucas, R.A., Professor W. M. Flinders Petrie, Mr. John W. Simpson [F.], Mr. Raymond Unwin, just previously elected Fellow, Mr. Frederick W. Platt, Building Surveyor for Salford, and Mr. Bertram Christian. These gentlemen afterwards attended the meeting.

### The King and the Institute.

At the opening of the proceedings the President called upon the Secretary to read the following letter which had been received from Sir William Carington at the close of the last sessional meeting :

*Marlborough House : 21st June 1910.*

DEAR SIR,—I am commanded by the King to inform you that His Majesty is graciously pleased to become Patron of the Royal Institute of British Architects, and that His Majesty will continue to present to your Society the Royal Gold Medal for Architecture.—Yours faithfully,

W. CARINGTON,

*Keeper of His Majesty's Privy Purse.*

*The Secretary R.I.B.A.*

The announcement was warmly applauded.

\* The old meeting-room on the first floor of No. 9, where the Institute meetings have been held without a break for the past fifty-one years, is now to be kept solely for the use of the Library. A plan of the new premises, with a description of the purposes they are to serve and the work done to adapt them for these purposes, will be found in the JOURNAL for 24th September.

### Nominations to Hon. Membership.

The President said he thought that the Meeting would like to hear read the very interesting list of names of distinguished men who had kindly consented to become members of the Institute, and who were now nominated for election. The Secretary read the names as follows :—

#### AS HON. FELLOWS.

The Right Hon. Arthur J. Balfour, P.C., M.P. ; The Right Hon. John Burns, M.P., President of the Local Government Board ; The Right Hon. Lewis Harcourt, P.C., M.P. ; Field-Marshal Viscount Kitchener of Khartoum, G.C.B., O.M., G.C.M.G. ; The Right Hon. the Earl of Plymouth, P.C. ; The Right Hon. the Lord Redesdale of Redesdale, G.C.V.O., K.C.B.

#### AS HON. CORRESPONDING MEMBER.

Daniel Hudson Burnham, M.A., Ph.D., LL.D., Chairman of the American Commission of Fine Arts ; of Chicago, U.S.A.

#### AS HON. ASSOCIATES.

David George Hogarth ; William Hesketh Lever ; John Seymour Lucas, R.A. ; Professor W. M. Flinders Petrie ; John Singer Sargent, R.A. ; Marion Harny Spielmann, F.S.A. ; William Hamo Thornycroft, R.A. ; Lawrence Weaver.

### The Town Planning Conference : Presentation to Mr. John W. Simpson.

The President, before delivering his Opening Address, said he had a pleasant duty to perform in connection with the Town Planning Conference which had recently taken place under the auspices of the Royal Institute. They would all be aware that it was largely in consequence of the support received from the Royal Academy, from the Corporation of the City of London, and from various public-spirited persons that the Conference had been so great a success. Letters of thanks, formally signed by the President and Council of the Institute, had been sent to the various gentlemen and corporations who had given such generous assistance in the work, but he thought members would like an opportunity of expressing by acclamation their appreciation of the services which had been so freely rendered. Their thanks were in the first place due to the Royal Academy for lending their galleries in which to hold the Exhibition, to the Corporation of the City for lending the Guildhall for the purpose of the Inaugural Meeting, and to the Lord Mayor for his generous entertainment of the Conference at the Mansion House. He asked the meeting to give the most cordial expression of their appreciation of all these courtesies. (Loud applause.) Coming to their own particular branch of the work they had to thank the Executive Committee, with the indefatigable chairman Sir Aston Webb at its head, for the immense amount of work they had done for the Conference. He was sure, however, he should have the whole committee with him if he singled out two members of that committee

who were deserving of the Institute's special thanks. The first was Mr. Raymond Unwin—(applause)—on whose shoulders had fallen almost entirely the organisation of that magnificent exhibition at Burlington House. He would call their attention to the fact that at the time Mr. Unwin was doing all this work he was not a member of the Institute; he had taken all this trouble for the good cause without being in any way officially connected with the Institute. He (Mr. Stokes), however, was now glad to be able to inform the Meeting that the Council had that day elected him as a Fellow—(applause)—in recognition of the great services he had rendered, first to the cause of Town Planning, and secondly to the Institute, for it was no small thing for the Institute to have brought about such a remarkable exhibition, and it was no small thing for Mr. Unwin to have organised it in the splendid way that he had done. The second name was that of Mr. John W. Simpson. (Loud and prolonged applause.) He thought that applause showed very conclusively how much Mr. Simpson's work was appreciated, and it was hardly necessary for him to expatiate upon it. He should like to say, however, in spite of that applause, that he did not think members had any notion of the enormous amount of work he had done. Mr. Simpson was a born organiser, and it was thanks to his splendid talent in this regard that the Conference had been such a success, and had gone off without hitch of any kind or sort. Members had testified their appreciation by clapping their hands, but it had occurred to the Council that the Institute would like to give Mr. Simpson something a little more tangible than applause; so they had bought him as a present an old Sheffield plate inkstand and he hoped they would approve of the design. (Applause.) It was the kind of thing he thought that Mr. Simpson would most like. On it was inscribed "To John W. Simpson, from the Royal Institute of British Architects, in appreciation of his services to the Town Planning Conference 1910." (Applause.) He would not ask Mr. Simpson to gauge their appreciation of his work at the face value of this inkstand, but he was sure members would like to make him a present of some kind, and he therefore proposed to present this inkstand on their behalf. He would ask Mr. Simpson to accept it as a small token of their esteem and regard. (Loud applause.)

MR. JOHN W. SIMPSON [*F.*], who was received with enthusiastic cheers, said he was very grateful—more grateful than he dare attempt to tell them—for all the kind things the President had said and for members' endorsement of those kind things by their applause. It was, he believed, the first time that the Institute as a whole had made such a presentation to one of its members, and he felt very proud that they had thought him worthy to receive it. His pride, however, was tempered by the fact that he was really but a

figure-head—"No!"—and that he received their thanks as representing a band of workers over whom he had had the honour to preside—a band so large in numbers that he feared the resources of the Institute did not, alas! suffice to pre-ent each one with an inkstand! He desired therefore to acknowledge on behalf of his fellow-workers the recognition so handsomely and generously accorded. It was a great pleasure to him to have this occasion of saying publicly how much he owed to the President, and to Sir Aston Webb as Chairman of the Executive Committee, for the full and unquestioning confidence they had been good enough to place in him, so that he felt that whatever steps he took he should be sure of having their support. There were many others. There was Mr. Unwin: he need not dwell on what he had done; it was known and seen by every one. He could only say that with such an organiser as Mr. Unwin at his elbow it would indeed have been difficult to go far wrong. Mr. Lanchester, too, as Secretary of the Executive Committee and of the Papers Committee, had done an enormous amount of preliminary work that had perhaps hardly been understood by those who merely saw the end of it. Then there was Sir Brumwell Thomas, to whose patient care was due the credit for arranging the visits. Last, but not least, there were Mr. Henry Tanner and Mr. Dare Clapham, who acted as brigadier-generals in charge of a mixed division of police, commissionaires and boy scouts, achieving great renown as being men who knew their job and saw that someone else did it! (Laughter.) These were but a few of the names he might mention as entitled to the Institute's thanks; their acts and all that they did, were they not written in the Book of the Chronicles of the Conference, which he hoped would be issued shortly? He could not let the occasion pass, however, without special mention of the devoted and unselfish work of the staff of the Institute. (Loud applause.) He was afraid they had been abominably ill-treated; they had been very hard worked indeed, but from the Secretary to the typists it had been a pleasure to be associated with them in intimate work. It had been their good fortune to achieve success, and he thought the Royal Institute was benefited by being brought so prominently into public notice. It had been given a place in the sun, and it was for the body of its members to keep it there. The Institute had done its duty to the profession by showing the public that the finest town planning was, and always had been, done by architects. Let the architects of this country profit by the lesson which had been given to the public. It would be a poor return for all their kindness to detain the meeting any longer from hearing the President's Address; but in the name of his co-workers, who, he hoped, would come and dip their pens in his beautiful inkstand as often as they could for the good of the Institute, he



thanked them from the bottom of his heart for their generous kindness.

#### The Proposed St. Paul's Bridge.

The *Times* of Tuesday printed the President's Opening Address almost *in extenso*, and his references to the St. Paul's Bridge question furnished the text for a leading article in the issue of the following day. The President's announcement that the representations of the Institute deputation had been disregarded and misunderstood would be received, said the writer, with wonder and regret. At present the Corporation have approved a plan on which the position of St. Paul's Cathedral is not even indicated, and from this it is not unfair to assume that they have not properly considered the relation of the Cathedral to the bridge. The article continues:—

The Institute have decided to petition the Corporation to reconsider their procedure; and if their petition is disregarded they threaten to oppose in Parliament the Bill by which the Corporation will seek for powers to erect the bridge. But it is to be hoped that this extreme step will not become necessary. We would urge the Corporation and their Committee to remember that this matter is not their private concern, but the concern of the whole country. If they erect another eyesore in London, it will be no excuse that they erect it at their own expense. In this matter, as in all others, they are the guardians of the public interest, and it is their duty, in the public interest, to take the best possible expert advice before they settle upon a plan. The most splendid opportunities in London have been thrown away again and again for the want of just that deliberation which the Institute is urging upon the Committee. Business committees in England seem to be by nature impatient of all æsthetic considerations; and the result of their impatience is usually a blunder, which is only discovered and regretted when it cannot be remedied. The Committee in this case cannot pretend that the members of the deputation from the Institute do not know what they are talking about. If they disregard the advice of that deputation, they must do so only on the grounds that they know better themselves, or that æsthetic considerations are of no importance. At present, however, they seem merely to have misunderstood the nature of that advice; and we may hope that with a better understanding they will change their minds.

#### Suggested New Charing Cross Bridge.

Referring to the proposal for a new Charing Cross Bridge, in connection with the King Edward Memorial, the *Times* article already quoted says:—

St. Paul's Bridge is not the only new one proposed at the present moment. We hope that serious consideration will also be given to the scheme for a new Charing Cross Bridge in connexion with the King Edward Memorial which a correspondent outlined in our issue of Monday. We notice that the Mansion House Committee have decided only to recommend at present the erection of a statue to King Edward, and will further consider various other proposals for a larger memorial. The proposal of the bridge has this merit, that it would, if carried out, remove a glaring eyesore

and inconvenience from the very centre of London, and that it could be at the same time very easily and closely associated with the King's memory. In fact, there is no kind of memorial that may so well combine sentiment with utility as a bridge. It may have all the beauty of a triumphal arch, and yet it is not a mere useless ornament like most triumphal arches. The Bridge of King Edward would preserve his memory as the memories of Titus and Constantine are preserved by their Arches in Rome, and for all who might remember the present state of things it would preserve his memory by the most powerful means possible—namely, by the force of contrast. Undoubtedly the scheme would be enormously expensive, but it would also be of extreme and lasting utility; and there can be little doubt that sooner or later it will have to be carried out. If it were carried out now as a memorial to the King, we may be sure that it would be handsomely executed; if it is carried out in the future under mere pressure of necessity, it may be executed in our usual makeshift manner; and in that case London will profit only in convenience, not in beauty. The best memorial to the King will be one that shall increase both the beauty and the convenience of the capital.

#### Workmen's Conference on Town Planning.

A Workmen's Conference on Town Planning, arranged by Mr. Henry R. Aldridge, Secretary of the National Housing and Town Planning Council, was held at the Institute Galleries on Saturday the 22nd ult. The main object of the Conference was to call attention to the remarkable collection of town-planning drawings, plans, and models on view at the Royal Academy, and to give workmen and representatives of various societies an opportunity of inspecting them. The chair was taken by Mr. Leonard Stokes, President R.I.B.A., who in a short address of welcome to the Conference said that all architects appreciated the value of the British workmen. What would architects do without the men who produced the buildings for which the architects got the largest share of credit? Conditions had changed, and he was afraid that workmen now were only allowed to do what they were told, but his experience was that the British workman was always a good class of man, and the architect was grateful to him for the way his work was carried out. Mr. John Burns was to be congratulated on his position, which he had attained entirely through his own hard work and study. The conditions under which the working man had to live were pitiable in many ways, as Mr. Burns knew so well, and he had produced the Town Planning Act with the object of improving them. Therefore, he (Mr. Stokes) suggested that they should do all they could to help forward the movement, because workmen could understand drawings and plans. Mr. Burns said that a mean street made a mean man. Perhaps they also suffered from the fact that mean men often made mean streets, and if they were allowed to do so they would continue in that course. This Town Planning Act would enable the authorities to put the extinguisher on the mean man. There had

been much waste in the spending of the rate-payers' money. If they got rid of sickness, poverty, and crime, or even reduced them by half, they would reduce the workhouses, the asylums, and the prisons by half. Wages were not very high now, and the working man was hard put to it to make both ends meet; it would, however, help him enormously if he could have a healthy home, a healthy wife, and healthy children; and the Town Planning Act would, it was hoped, go some way towards securing at any rate healthy surroundings for them.

Mr. John W. Simpson [F.], addressing the meeting, said: The President has set me a commendable example of brevity which I will endeavour to follow. "Time is short," and so is the light of an October afternoon. "Art is long," and you will find a great deal of it in the Exhibition you are about to visit. The art of laying-out either the nucleus of a new city or the extension of an existing one to the best advantage of its population, as regards economy, beauty and health, both now and in time to come, is for want of a better term called "Town Planning." I wish we could find a better term, partly because I have got rather tired of hearing it during the last few weeks, and partly because it does not seem to me to quite suggest its real meaning, which is a very wide one. We of the Royal Institute of British Architects have long been impressed by the public spirit of our colleagues in other countries, notably in America, who have prepared and formulated schemes for the extension and improvement of their native cities. We therefore set up some years ago a Town Planning Committee, whose duty it is to study such schemes, to found affiliated committees in the Provinces, and endeavour to prepare the way for similar schemes in Great Britain. So that, when the Town Planning Act of 1907 was brought forward by the President of the Local Government Board, we were prepared with certain suggestions. These were put before him by a deputation of the Royal Institute, which was received in a most kindly and sympathetic way, and succeeded in obtaining, if not quite all we asked for, at least the valuable privilege of being represented and heard at the enquiries to be held upon proposed schemes of Town Planning by the Local Government Board. Well, talk and criticism are all very well, but we felt that now, thanks to Mr. Burns, Town Planning has become a living thing in this country—though at present very young, and rather bewildered at finding itself here at all—it was time that an object-lesson should be added, so that folk could see what it really is that we are all talking about. That object lesson is the Exhibition which you are to visit this afternoon, the finest—by common consent—which has been brought together in any country: a little "record" for Great Britain. We believe that we have performed a public duty in placing before the local authorities who will have to prepare schemes under the Act, the best information, both historical and actual, which

is available in the Papers read during last week's Conference, and the visible results of the experience of others as shown at the Royal Academy. It has proved a rather more costly matter than some of us perhaps anticipated, but I have heard no complaint from our members on that score. Now, as is the case with all conventional phrases, "town planning" has different meanings in different mouths. To the medical officer of health it means sanitation and healthy houses; to the engineer trams and bridges and straight roads, with houses drilled to toe a line like soldiers. To some it means open spaces; to the policeman regulation of traffic; to others a garden plot to every house, and so on. To the architect it means *all* these things, collected, considered, and welded into a beautiful whole. It is his work, the work of the trained *planner*, to satisfy all the requirements I have mentioned, and to create in doing so a work of art. And do not think that this is an unprofitable matter even from the merest business point of view. Nothing is more ruinously wasteful than unregulated growth, whether in nature or a city. It will certainly have to be pruned away, thinned out, or dealt with in suchlike drastic fashion if it is not trained and supervised during its formation; and to cut away slums and open up light and air to them by avenues and open spaces is a very costly and not always satisfactory process, which may be avoided by intelligent anticipation. Then there is another point which is perhaps the most important of all—the tremendous influence upon man, the animal, of the surroundings in which he is bred and passes his life. Ruskin, speaking of the blocks of London houses intersected by railways, said, "It is not possible to have any right morality, happiness, or art in any country where the cities are thus built, or thus, let me rather say, clotted and coagulated. Spots of a dreadful mildew, spreading by patches and blotches over the country they consume. You must have lovely cities, crystallised not coagulated into form—limited in size and not casting out the scum and scurf of them into an encircling eruption of shame, but girded each with its sacred *pomerium* and with garlands of gardens full of blossoming trees and softly guided streams." You will get no sound morals if you deprive the animal man of those reasonable and healthy pleasures to which he is entitled; and Art aims at giving pleasure in a noble form. "*Non tantum corpori*," said Seneca, "*sed etiam moribus salubrem locum eligere debemus*."

Professor Geddes said that, despite the beauty of American town sites, when it came to the question of keeping the whole population in health and happiness, America had signally failed, owing to its totally immoral capitalisation. In looking to the health and comfort of the people, Germany led the world and America lagged behind, its working men being in the lowest condition to-day. Frankfurt

was regarded as ideal in its town planning; while the River Clyde was the dirtiest in history, the slums of Glasgow the filthiest, there being more drunkenness, overcrowding, and misery in the slums of that city than in any other spot on the planet. Generally speaking, everything in the matter of town planning in the United Kingdom was done in "hugger-mugger" fashion, of which the blocks of Piccadilly were the most characteristic symbol.

The members of the Conference then adjourned to the Royal Academy, where the exhibits were viewed under the guidance of the organiser of the Exhibition. Mr. Raymond Unwin.

#### Architects and the Royal Institute.

The following letter, signed by the Secretary of the Institute, has appeared in the leading London and Provincial dailies:—

SIR,—May I, through the instrumentality of your influential organ, call the attention of all architects and assistants to the importance of the new department which the Royal Institute has inaugurated with the object of drawing together into the central organisation every member of the profession throughout the United Kingdom and the Empire, whether now or not yet in practice?

One of the latest acts of our late beloved King was to grant a new Charter with the above object in view, and to create a new class, to be called Licentiates of the Royal Institute.

To this class all professional architects who have been either five years in practice or ten years engaged in the study of architecture are eligible as candidates without examination. Already several thousands have applied for papers, and, as admission to the class is only open until next March, I would urge every architect interested in his profession to make the earliest application for admission. It is the one and great opportunity for securing corporate unity to advance the interests of architecture and of its exponents. The annual payment is but a guinea. This confers many privileges, including the free receipt of the JOURNAL of the R.I.B.A., containing the valuable papers read at the general meetings and illustrations of most interesting work, old and new, all over the world. It gives Licentiates a place of call in London, with access to the library, the best of its kind in the kingdom.

The Institute is only awaiting the enrolment of the Licentiates to make application to Parliament for recognition of all *bona fide* architects, and those who stand aloof are only delaying this application.

Part of the provision of his late Majesty's Charter is to create machinery by which every Licentiate may, if he so desires, proceed to the Fellowship as soon as he is eligible. All assistants who are eligible are assured of a hearty welcome.

It only remains to add that the allied societies of architects all over the Empire are in sympathy with

this great movement, and many have taken, and are taking, active steps to further the objects in view.—I am, Sir, yours faithfully,

IAN MACALISTER, *Secretary.*

#### Preservation of the Auld Brig of Ayr.

Mr. James A. Morris [F.], who carried out the architectural work in the preservation of the famous Auld Brig of Ayr, writes that Mr. Hall Blyth's strictures on the bridge during the discussion following Professor Baldwin Brown's Paper on "Town Planning and the Preservation of Ancient Features" at the recent Town Planning Conference, have been widely circulated in the Scottish Press, and asks space in the JOURNAL for an extract from his reply which appeared in the *Scotsman* of the 14th October. Mr. Hall Blyth is reported to have said

"that he was one, if not the chief, of the sinners who had condemned the Auld Brig of Ayr. They were all anxious to preserve ancient monuments if they were beautiful, but that bridge could not be said to be beautiful, artistic, or useful. It had simply been preserved because of the wonderful love his fellow-countrymen had for Robert Burns, who had written a poem about the Auld Brig. This, however, was not the bridge that Burns wrote about. The arch on the north side of the river had been washed away many years ago and had been entirely rebuilt. The bridge as restored was only fit for foot-passengers. Two of the arches were altogether out of line and out of adjustment."

Mr. James Morris, in his reply, says:—

"When the preservation of the Auld Brig was still on the knees of the gods, Mr. Hall Blyth reported that it appeared to him 'quite impossible to save the Brig as it stands at present,' and with ready respect for his engineering skill, one may be permitted somewhat to marvel at his pronouncement. As a matter of fact, the Brig has been preserved as it stood, and well preserved, by engineering skill. In Scotland Mr. Hall Blyth as an engineer holds a position of eminence, and as he was the engineer consulted by the Corporation at the time of the controversy, his statement can scarcely be allowed to pass unchallenged, seeing that it has already been freely circulated by the Scottish Press. Admittedly, not only two arches, but the whole Brig, is out of line—perhaps, in an engineering sense, out of adjustment—but Mr. Hall Blyth should, I think, grant that the straight-edge and tee-square do not hold the only nor the ideal line of beauty, nor yet are they the only canons upon which beauty of line may be established. That the Brig is neither 'beautiful, artistic, nor useful' may be Mr. Hall Blyth's opinion, and he is quite entitled to express it; but when he ventures a further incursion into the realm of fancy, and gravely states that the Brig is not the Brig of Robert Burns, he wanders even more hopelessly than before. Surely Mr. Hall Blyth knows, if he knows anything of the Brig at all, that the northmost arch fell and was rebuilt in 1732-33, and that Burns did not write his poem till 1786. How, then, is it not the Brig about which Burns wrote? Its form is the same, the number and identity of the arches the same, the piers, cut-waters, and approaches are the same; and in the preservation effected, save in a small portion of the parapet and in the part renewal of the defective and modern facing of the piers, it is almost stone for stone the Brig of Robert Burns. It is this point, and this point alone, that touches the Burns interest; hence this refutation."

**Extra Sessional Paper, 28th November.**

An extra General Meeting (Ordinary) will be held at the Institute on Monday, 28th November, when Professor Cesare Formilli will read a critical and historical paper, illustrated by lantern slides, on the Cosmati mosaic- and marble-workers who were called from Rome to Westminster Abbey to build and decorate the Shrine of Edward the Confessor, the Tomb of Henry III., and other tombs, and to execute the mosaic pavement before the Altar and in the Sanctuary. There will be on view the same day in the galleries of the Institute an exhibition of full-size coloured reproductions of the above works, executed under the direction of Professor Formilli, by order of the Italian Government, for the International Exhibition of Art to be held in Rome in 1911.

**Election of Licentiates R.I.B.A.**

At the Council Meeting of the 7th inst., the following candidates, having been found eligible and qualified under the Charter and By-laws, were elected Licentiates of the Institute in accordance with the provisions of By-law 12:—

ANDERSON: Alexander Ellis (Northampton).  
 ANDREWS: Arthur George (Colchester).  
 BAKER: Joseph Phillips (Willenhall, Staffs.).  
 BELLAMY: Franklin Joseph.  
 BIRD: Ernest Charles Henry (Trichinopoly, South India).  
 BUCK: Walter Gerard (Sheffield).  
 CARVER: Ernest Edward (Canada).  
 COBBETT: Guy Bernard.  
 COULSON: Richard (Dublin).  
 CRANE: George Percy.  
 CRESSWELL: William Thomas.  
 CROTHALL: Harry George.  
 DALLAS: James (Birmingham).  
 DEMPSTER: Stanley Matcham.  
 DIAMANT: A. St. John.  
 DOLMAN: William Ledsham (Windermere).  
 DYBALL: Harvey.  
 EDWARDS: William Frederick (Birmingham).  
 FARMER: Harold Quentery (Manchester).  
 FINCH: William Alexander.  
 FISHER: Horace Reginald (Swindon).  
 FLETCHER: Robert Henry (Hull).  
 FORBES: James (Middlesborough).  
 FORSTER: Joseph (Carlisle).  
 GURNEY: Arthur Edward (Poland).  
 HALL: Edward Ernest.  
 HASLOCK: William Edwin (Middlesborough).  
 HOOLEY: Ernest (Long Eaton).  
 HORTON: Harry (Cannock).  
 HUXLEY: William Sherrin (Selangor, Federated Malay States).  
 JAMES: William Herbert.  
 JONES: John Joseph.  
 JONES: Wallace Stevens (Bristol).  
 LAMB: Percy A.  
 LANCASTER: Percy (Southport).  
 LANGLEY: Samuel Henry (Leicester).  
 LLOYD: Bernard Mosley (Birmingham).  
 LOCKWOOD: William.  
 MACDONALD: William Roderick.  
 MARSHALL: Charles Thomas (Newcastle-on-Tyne).  
 McILROY: David Suttie (Calgary, Alberta, Canada).  
 McINTYRE: John (Edinburgh).  
 MERSON: John Bruce.

MOUNTAIN: William John (Bournemouth).  
 NEWTON: George, jun. (Bournemouth).  
 O'ROURKE: Horace Tennyson (Dublin).  
 PALSER: Edwin.  
 PARKER: Sydney Wills.  
 PATON: James Stanley (Birmingham).  
 PRICE: Mansfield.  
 REID: John Andrew (Glasgow).  
 RIGG: Richard Morton (Penrith).  
 SAMPSON: Robert William (Sidmouth).  
 SOUTTAR: James Augustus.  
 STEEL: John Bothwell (Glasgow).  
 STEPHENS: J. H. (Bangalore, South India).  
 STOCKDALE: John Carrington.  
 TOOMER: Albert John (York).  
 TWEEDY: William (Newcastle-on-Tyne).  
 WAKEFORD: Bertie Harry.  
 WEATHERLEY: Thomas (Bolton).  
 WRIGHT: Herbert A.

**Presentation to Lady Knill.**

The Council, on behalf of the Institute, have presented to the Lady Mayoress (Lady Knill) a replica of the Pugin Medal in silver which they award every year to the student who has done the best work on the lines which made Augustus Welby Pugin so well known in English architectural history. This is given as a souvenir of the Town Planning Conference. Lady Knill is a granddaughter of Pugin.

**Obituary.**

THE REV. ROBERT MEDLEY FULFORD, Vicar of Buckereil, near Honiton, who died on the 16th September in his sixty-sixth year, was at one time a practising architect of considerable repute, and for many years an Associate of the Institute. The following notice from a local paper has been kindly sent by Mr. C. H. Brodie [F.], who served his pupilage in Mr. Fulford's office:—A remarkable man in many ways, and a singularly lovable one, was the Vicar of Buckereil, and his death is a great grief to a wide circle of sincere friends and admirers. Tall in stature, and of striking presence, the late Rev. R. M. Fulford had for the last twenty years been an ideal, hard-working, self-sacrificing, and sympathetic country clergyman. Few were aware that the unassuming and humble "parson" had been an exceptionally successful professional man. Some twenty years ago he deliberately gave up a large and lucrative practice as an architect to take Holy Orders and to live through a large portion of the rest of an anxious life upon the modest stipend of a curate. Mr. Fulford was one of several sons of the late Rev. J. L. Fulford, M.A., who for fifty-four successive years was Vicar of Woodbury. This venerable divine was one of the original members of the Exeter Diocesan Architectural Society, which was formed in that city in the early forties, and his name will probably still be remembered as a prominent pioneer during the wave of church restoration that swept over the West Country as elsewhere in England during the second half of the last century. Born at Woodbury on 22nd February 1845,



Robert Medley Fulford from his early youth showed great artistic ability. Hence it was that he was articled by his father to the late John Hayward, of Exeter, the designer of the Albert Memorial Museum, the Diocesan Training College, All Hallows Church, and many other important buildings in that city. He was also for some time with the late William White, F.S.A., of Wimpole Street, W., who was prominently associated with the great Gothic revival. Mr. Fulford afterwards settled in Exeter, during most of the time being identified with church building and restoration. In his early professional career he practically rebuilt the parish church at Colyton Raleigh, and in 1882 erected the fine parish church of St. Matthew at Exeter. Four years later he designed St. James's in the same city. Prior to that he had conservatively restored the parish churches of St. Michael, Pinhoe, and St. Mary, Poltimore; and of St. Thomas à Becket at North Lew. In 1884 he renovated the Church of SS. Margaret and Andrew at Littleham, near Exmouth, in the graveyard of which lie the remains of Lady Nelson, the wife of the victor of Trafalgar. In 1886 he restored St. Mary's, Exbourne, and three years later St. Bartholomew's at Bow. It was by his great artistic genius that much of the beautiful work at St. Andrew's, Kenn, was also carried out. Amongst a number of other churches in the beautifying of which Mr. Fulford was closely identified are St. Saviour's, Torre; St. Mary's, High Bickington; and St. John's, Yacombe. In works of a secular character Mr. Fulford was equally successful, and many important buildings were erected from his designs. His last ecclesiastical work of note was St. Mark's Church, Torquay. It was whilst in the zenith of his fame as an architect that, against the advice of many friends, he resolved to give up his practice and devote the rest of his life to the Church. In 1891, soon after making his final decision, and shortly after the death of his first wife, he went to Australia, and did duty for a year or two as deacon at Christchurch Cathedral at Ballarat, in the colony of Victoria. Returning to England, he took priest's orders at Exeter Cathedral in 1893, and during several succeeding years did much self-denying and useful work as an assistant curate in his native parish of Woodbury and at Crediton. Afterwards he was for several years Incumbent of St. Andrew's at Grenada, in the Windward Islands. Ten years ago he was appointed Vicar of St. Mary the Virgin, at Hennock, and there he remained the centre of active spiritual life until shortly before his death. Whilst in residence at Hennock he made many most desirable improvements to the church, and greatly enlarged the vicarage. The Dean and Chapter of Exeter in the early part of this year offered him the living of SS. Mary and Giles, Buckereil, and this he accepted; but a few months after, amidst the universal sorrow of all who knew him, he was called to his rest.

#### The Institute Conversazione.

The Conversazione held by the Institute on the 8th inst. was a highly successful and very enjoyable event. The new Galleries lend themselves admirably to a gathering of this kind. Though at a moderate computation there must have been little short of eight hundred persons present, at no time during the evening did the rooms appear inconveniently crowded. The President, accompanied by Mrs. Stokes, received the company, which included many distinguished guests, in the West Gallery. A selection of music was performed in the East Gallery by Herr Gottlieb's Vienna Orchestra. Refreshments were served in the Library rooms. An Exhibition was specially arranged of drawings and photographs representative of the works of Royal Gold Medallists from 1848 to 1910. The works will remain hung for some weeks, and will be on view during the whole of the time except during the Examinations.

#### CORRESPONDENCE.

##### Architecture and Town Planning.

137 Church Street, Edgware Road, W.;  
2nd November 1910.

To the Editor JOURNAL R.I.B.A.,—

SIR,—One of the main practical points in town planning, the beauty of individual buildings and their harmony of main lines, mass and scale with adjoining work, may be successfully dealt with by the Royal Institute in London by means of medals of merit, money prizes, and perhaps offers of honorary membership, to architects who, in the opinion of the Art Committee, have built the best façades of the year, as in Paris.

Designs should be considered not only on their special merits but on their degree of approach to a preconceived standard, quality, and style that the Art Committee of the Institute or a Committee elected for the purpose could fix for the blocks or streets in question.

If there is anything practical in town planning, some preconceived designs for particular thoroughfares are urgently necessary for a good architectural result, however loose such notions of general design may be. Architects could embody in their designs for new buildings, alignment of main lines, agreement of mass and scale with adjoining work, if such work had received the hallmark of recognition by the Royal Institute. Such co-operation among architects combined with the encouragement that a system of official recognition of merit would give is eminently practical, and deserves the attention of the Council of the Royal Institute.

If the financial aspect of this proposal is in any way terrifying, may I suggest that the Council of the Royal Institute approach the L.C.C. and municipal councils and endeavour to press the

importance of the architectural surveillance, not only of buildings, but of streets, and the desirability of local bodies providing the necessary outlay for their own benefit.—Yours faithfully,

ERNEST J. DIXON [A.]

**Proposed Central Avenue for London.**

149 Bishopsgate Street Without, E.C.4;  
8th November 1910.

To the Editor JOURNAL R.I.B.A.,—

DEAR SIR,—In Mr. Davidge's admirable summary of the Town Planning Conference he states that I propose the formation of an avenue from "Lea Bridge" to Shepherd's Bush Green. He is just four miles out in his description.\* The starting point of the avenue in question was where the East India Road crosses the Lea and joins the Barking Road and Victoria Dock Road at Canning Town. From thence the avenue proceeds through the slums of Poplar, Bromley, Lamhouse, Stepney, Whitechapel, Spitalfields and Shoreditch, and on to the West in the manner described in the article. The object is two-fold: to open out the slums and to carry the heavy traffic from the docks and river-side to the north of the City so as to avoid the traffic congestion in the central area.—Faithfully yours,

ARTHUR CROW.

### MINUTES. I.

At the First General Meeting (Ordinary) of the Session 1910-11, held Monday, 7th November, 1910, at 8.30 p.m.—Present: Mr. Leonard Stokes, *President*, in the Chair; 1 Hon. Fellow, 45 Fellows (including 14 members of the Council), 48 Associates (including 3 members of the Council), 10 Hon. Associates, 23 Licentiates, and numerous visitors: the Minutes of the Special and Ordinary Meetings held 20th June having already been published [JOURNAL, 25th June], were taken as read, and signed as correct.

The Secretary read a letter from Sir Wm. Carington, Keeper of His Majesty's Privy Purse, announcing that the King had graciously consented to become Patron of the Institute and to continue the presentation of the annual Gold Medal for Architecture.

The following candidates, being found eligible and qualified according to the Charter and By-laws, were nominated for election—viz.: As FELLOWS (7): John Cubbon [A. 1899] (Manchester); John Walter Little [A. 1891] (Tonbridge); Edgar John Pullar [A. 1901] (Rangoon); Frederick John Osborne Smith [A. 1901] (Johannesburg); William Henry Stucké [A. 1899] (Johannesburg); Joseph Foster Wood [A. 1883] (Bristol); Clyde Francis Yeung [A. 1900]. As ASSOCIATES (53): Colvin Tyler Armstrong [Special Examination]; Josias Crocker Beare [P. 1900, S. 1906] (Newton Abbot); Alan St. Hill Brock [P. 1905, S. 1906]; Francis Holles Bulmer [P. 1905, S. 1906]; James Muir Calder [Special Examination] (Rochdale); Arthur N. Cantin [Colonial Examination, 1909] (New York, U.S.A.); Alfred Edward Catt [P. 1897, S. 1905]; Henry John Chetwood [P. 1902, S. 1909]; James Bertie Francis Cowper [P. 1906, S. 1907] (Manchester); Herbert Cox [P. 1907, S. 1907]; Harry Royden Dowsell [Colonial Examination Montreal]; Hylton Basil Elkington [P. 1903, S. 1906];

\* Lea Bridge is in the North-East of London, near Leyton.

William Alfred Masters Fiddaman [P. 1903, S. 1906]; Thomas Francis Wiltshire Grant [P. 1902, S. 1907]; William Henry Gummer [Special Examination]; William Henry Gunton [P. 1909, S. 1909]; Alher Wilson Hall [P. 1900, S. 1905]; Joseph Louis Hampson [P. 1899, S. 1906] (Blackburn); Frank Henry Heaven [P. 1907, S. 1908] (Glamorgan); Sidney Thorn Hennell [P. 1900, S. 1904]; Samuel Woods Hill [P. 1901, S. 1903]; George Hollins, jun. [P. 1903, S. 1906] (Manchester); Harold Ridley Hooper [P. 1905, S. 1907] (Ipswich); Wilfred Hoyle [P. 1904, S. 1907] (Gravesend); Richard Melvil Fane Huddart [Special Examination]; Richard Jacques [P. 1904, S. 1907] (Harrogate); William Ingram Keir [P. 1902, S. 1905]; John Harold Kennard [Special Examination]; Douglas Chantler Leigh [P. 1905, S. 1905] (Warrington); Stanley Gage Livock [P. 1903, S. 1908]; Arthur George Lynham [P. 1901, S. 1904] (Northampton); Edward Brantwood Maufe, B.A. Oxon. [P. 1899, S. 1903]; Paul William Mulready [P. 1901, S. 1907]; Eric George Newnum [P. 1907, S. 1908]; Basil Oliver [P. 1900, S. 1902]; Victor Cinatti Batallia Reis [S. 1908] (Rugby); Thomas Herbert Rhodes [P. 1900, S. 1904]; Bernard Robson [P. 1904, S. 1906] (Scarborough); Herbert James Rowse [P. 1906, S. 1907] (Liverpool); Hubert Savago [P. 1900, S. 1906]; Lawrence Alexander David Shiner [P. 1902, S. 1906]; Hubert Niemann Smith [P. 1903, S. 1905]; Alan Leslie Snow [Special Examination]; Edward Woodhouse Stubbs [P. 1905, S. 1907]; Thomas Aikman Swan [P. 1902, S. 1908] (Edinburgh); Samuel Douglas Topley [Special Examination]; Horace George Turner [P. 1901, S. 1908]; Geoffrey Cecil Wilson [P. 1903, S. 1908]; Ralph Wilson [P. 1904, S. 1906]; Roland Leslie Wall [P. 1906, S. 1907]; Frank Coutts Webster [P. 1904, S. 1905]; Frank Woods [P. 1902, S. 1905] (Maidenhead). As HON. FELLOWS (6): The Right Hon. Arthur J. Balfour, P.C., M.P.; the Right Hon. John Burns, M.P., President of the Local Government Board; the Right Hon. Lewis Harcourt, P.C., M.P.; Field-Marshal Viscount Kitchener of Khartoum, G.C.B., O.M., G.C.M.G.; the Right Hon. the Earl of Plymouth, P.C.; the Right Hon. the Lord Redesdale of Redesdale, G.C.V.O., K.C.B. HON. CORRESPONDING MEMBER: Daniel Hudson Burnham, M.A., Ph.D., LL.D., Chairman of the American Commission of Fine Arts (Chicago, U.S.A.). As HON. ASSOCIATES (8): David George Hogarth (Oxford); William Hesketh Lever; John Seymour Lucas, R.A.; W. M. Flinders Petrie; John Singer Sargent, R.A.; Marion Harny Spielmann, F.S.A.; William Hamo Thorneycroft, R.A.; Lawrence Weaver.

The President tendered the thanks of the Institute to all who had helped to make the recent Town Planning Conference a success, mentioning particularly the Chairman and Members of the Executive Committee, the Royal Academy, the Lord Mayor and Corporation of the City, and Mr. Raymond Unwin, whom the Council had that afternoon, as a mark of their appreciation, elected to the Fellowship of the Institute.

Having referred finally to the eminent services rendered by Mr. John W. Simpson [F.] in organising the Conference and acting as Secretary-General, the President tendered him the Council's especial thanks, and on behalf of the Institute asked his acceptance of an inscribed inkstand in old Sheffield plate as a small token of their esteem and regard.

Mr. Simpson, in responding, referred in appreciative terms to the various members who had assisted in the organisation of the Conference.

The President having delivered the OPENING ADDRESS of the Session, a vote of thanks, proposed by Sir George Reid, and seconded by the Earl of Plymouth [H.A.], was passed to him by acclamation.

The proceedings terminated, and the Meeting separated at 10 o'clock.

